ORDER NO. EMID851102

# Service Manual

## Electronic Organ
## SX-G5

(EN), (EI), (EH), (EB), (EF), (EZ),
(EW), (EL), (EP), (EK), (XT),
(XL), (XR), (XS), (X), (XX), (XV)

**AREAS**

| | |
|---|---|
| (EN): | Norway, Sweden, Denmark |
| (EI): | Italy |
| (EH): | Holland |
| (EB): | Belgium |
| (EF): | France |
| (EZ): | Germany, Austria |
| (EW): | Switzerland |
| (EL): | Finland |
| (EP): | Spain |
| (EK): | the United Kingdom |
| (XT): | Taiwan |
| (XL): | New Zealand |
| (XR): | Australia |
| (XS): | Malaysia, Singapore, South Africa |
| (X): | the Middle East, Hong Kong, the Philippines, Indonesia |
| (XV): | Venezuela, Ecuador, Panama |
| (XX): | Peru, Chile |

## Specifications

| | |
|---|---|
| **Keyboards** | |
| • Upper Manual: | 49 Key (4 Octaves) |
| • Lower Manual: | 49 Key (4 Octaves) |
| • Pedal Keyboard: | 13 Key (1 Octave) + Full-bass Pedal |
| **Musical Display:** | FSC, VSC, Play Sequencer, Digital Memory Pack, PCC, Harmonic Coupler, Techni-Chord, Transpose, Tempo, Chord, Tuning, Tremolo Speed |
| **Fullband Setting Computer (FSC):** | **Record**, Digital Memory Pack...Lower Key 1~8 |
| **Voice Setting Computer (VSC):** | **Record**, I~VII, Cancel<br>20 Combination VSC (lower keyboard: 1~20) |
| **Play Sequencer:** | **Record**, Bass, Lower, Upper, Solo, Digital Memory Pack |
| **Orchestral Conductor** | |
| • Upper: | Upper Tab Voices, Percussive Presets, Organ Presets, Orchestral Presets, String Ensemble, Solo Synthe Presets, Vocal Ensemble |
| • Lower: | Lower Tab Voices, Percussive Presets, Organ Presets, Orchestral Presets, String Ensemble, Solo Synthe Presets, Vocal Ensemble |
| **Upper Tones** | |
| • Tab Voices: | Flute 16′, 8′, $5^1/_3$′, 4′, $2^2/_3$′, 2′, $1^1/_3$′, 1′—(**Record**...Flute level), String 8′, 4′ ...Slow Attack, Upper Volume |
| Percussive Tone: | 4′, $2^2/_3$′, 2′, Click...Volume, Long |
| Harmonic Coupler: | **Record**, $2^2/_3$′, Program, Cancel |
| • Percussive Presets: (Upper & Lower) | Acoustic Piano, Electric Piano, Harpsichord, Vibraphone, Acoustic Guitar, Jazz Guitar, Clavi, Banjo...Volume, Harmonic Control |
| • Organ Presets: | **Record**, I, II, III, IV, 20 Organ Presets, Digital Drawbars |
| • Orchestral Presets: (Upper & Lower) | Trombone, Saxophone, Accordion, Clarinet, Wah Brass, Synthe Brass...Volume, Harmonic Control |
| • Solo Synthe Presets: (Upper & Lower) | Trombone, Trumpet, Saxophone, Clarinet, Flute, Pan Flute, Cosmic, Synthe Chopper...Volume |
| • String Ensemble: | Volume |
| • Vocal Ensemble: (Upper & Lower) | Volume |

| | | |
|---|---|---|
| **Lower Tones** | | |
| • Tab Voices: | Flute 8′, 4′, 2′, String 8′, 4′...Lower Volume | |
| Harmonic Coupler: | **Record**, 2′, Program, Cancel | |
| • Organ Presets: | **Record**, Digital Drawbars | |
| • String Ensemble: | Volume | |
| • Percussive Presets: | (Upper & Lower) | common used for upper and lower tones |
| • Orchestral Presets: | (Upper & Lower) | |
| • Solo Synthe Presets: | (Upper & Lower) | |
| • Vocal Ensemble: | (Upper & Lower) | |
| **Bass Tones:** | Bass 16′, 8′, Acoustic Bass, Electric Bass, Synthe Bass, Tuba...Volume | |
| • Full-bass Pedal: | Bass Solo | |
| **Effects** | | |
| • Sustain: | Knee Lever<br>Upper ..................On, Length Control<br>U & L Percussive Presets ...On, Length Control<br>Lower ..................On, Length Control<br>Bass.....................Length Control | |
| • Reverb: | ○ | |
| • Multi-Tremolo/Vibrato: | Upper tab, Lower tab, slow/fast, Vibrato...**Record** (Tremolo Speed) | |
| • Celeste: | U. Tab Voices, U & L Orchestral Presets, U & L Solo Synthe Presets, L. Tab Voices | |
| • Glide: | Foot SW (left) | |
| **Techni-Chord:** | On, Close/Open | |
| **Drum Percussion** | | |
| • Rhythm selectors: | March, Shuffle, Swing I, Swing II, 8 Beat, Funk Rock, 16 Beat, Samba Rock, Ballad, Swing Rock, Disco I, Disco II, Rumba, Guaracha, Bossanova I, Bossanova II, Mambo, Cha-Cha, Samba, Baion, Waltz, Tango, Jazz Waltz | |
| • Arrange Percussion: | I, II, III | |
| • Drum Percussion Controls: | Volume, Mellow, On-Start/Stop, Synchro, Glide/Rhythm—Foot SW (left) | |
| • Tempo Set: | I, II, Manual, Fine, Tempo Control...**Record** | |
| • Fill-In & Intro: | I, II, Solo (Foot Switch right) | |
| **Rhythmic Orchestra:** | Rhythmic, Melodic...I/II, Volume | |

**Technics**

**Matsushita Electric Trading Co., Ltd.**
P.O. Box 288, Central Osaka Japan

| | |
|---|---|
| **Program Chord Computer (PCC):** | **Record**, PCC, Cancel |
| • Chord Composer: | Lower Keyboard... ⊢♩─, ◀, ▶, ⊢⌒⊣, ⊢⌒─⊣, 𝄆─⊣, 𝄋𝄌, D.S, ─⊣, ⊂⊃, ⊣⊢ |
| • Auto Play Chord: | Fingered, Memory, Cancel |
| **Program Rhythm Computer (PRC):** | **Record**, Composer I, II, III, |
| • Rhythm Sequencer: | Lower Keyboard...Clear, Beat, 2nd bar, Triplet, Accent/Pitch, I, II, III, 0~15, ⊢♩─, ◀, ▶, ⊢⌒⊣, ⊢⌒─⊣, 𝄆─⊣, 𝄋 𝄌, D.S, ─⊣, ⊂⊃, ⊕, ⊣⊢ |
| **Programmable Function Switches:** | **Record**, Knee Lever, Foot Switch R, L, Full-Bass Pedal |
| **Transpose:** | **Record**, ✗ (Transpose), [G] ~ [C] ~ [F♯/G♭] |
| **Tuning:** | Free Set, Pitch Control (−, +) |

| | |
|---|---|
| **Others:** | Power Switch, Main Volume, Expression Pedal, Headphone Jack, AUX Jack, Microphone Jack (with Volume), Line Out terminal (2ch/3ch), Ext I/O (FD) Terminal, Initial (Lower Keyboard) |
| **Speakers:** | 30cm 6Ω×1, 20cm 8Ω×3,<br>Horn Tweeter 6cm 6Ω×2 |
| **Maximum Output:** | 110W (3-channel) |
| **Power Requirement:** | 300W, AC 120/220/240V, 50/60Hz<br>AC 220V, 50/60Hz...Europe<br>AC 120V, 60Hz ......Taiwan |
| **Cabinet Dimensions: (W×H×D)** | 119.0cm ($46^{27}/_{32}$")×107.5cm ($42^{5}/_{16}$")×68.4cm ($26^{15}/_{16}$") |
| **Net Weight (without bench):** | 94kg (207.2 lbs.) |
| **Accessory:** | Digital Memory Pack (SY-P2)×1 |

- Common "**Record**" switch is used for these switches.
- Specifications subject to change without notice.

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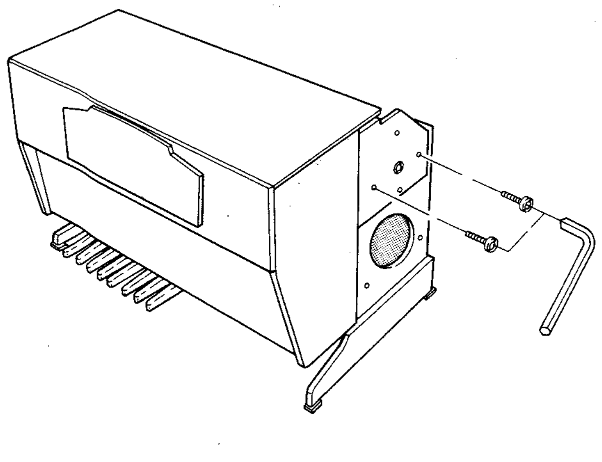
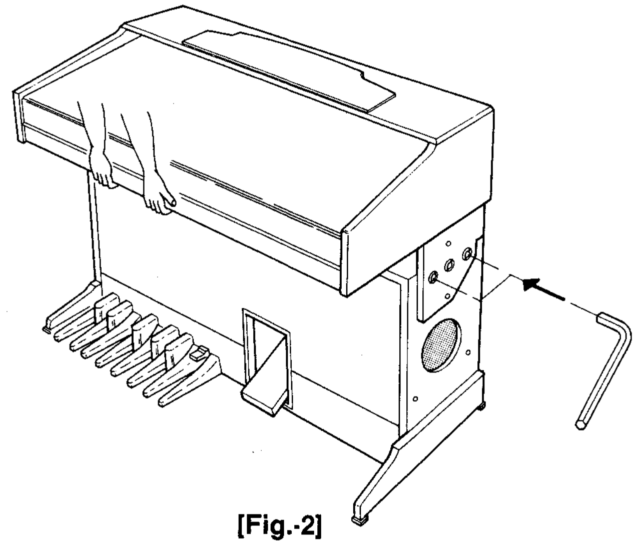
# HOW TO ASSEMBLE THE ORGAN

1. Remove the red screws using the supplied wrench.



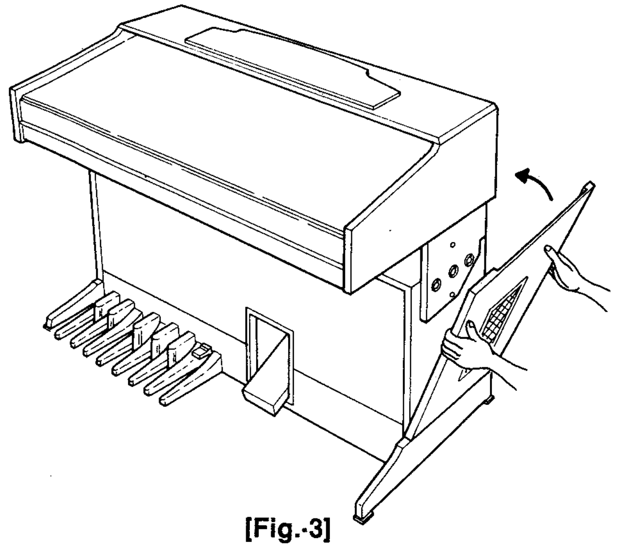
[Fig.-1]

2. Holding the upper cabinet section, lift it into position and tighten the red screws firmly.



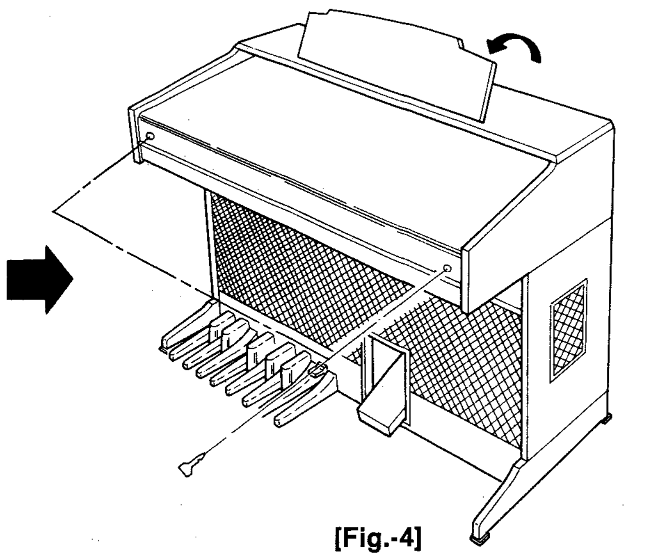
[Fig.-2]

3. Hold each side panels with both hands and install the side panel on the side board of cabinet.



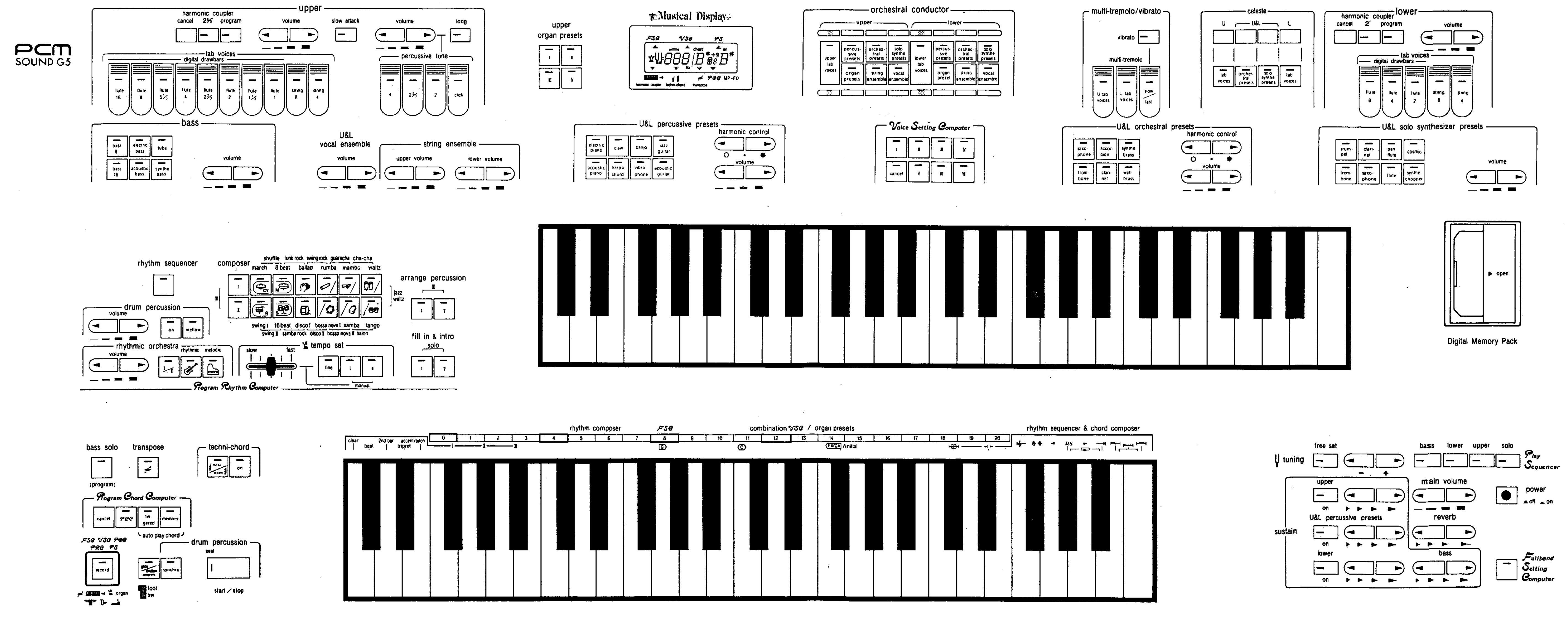
[Fig.-3]

4. Unlock the sliding cover with the accessory key.

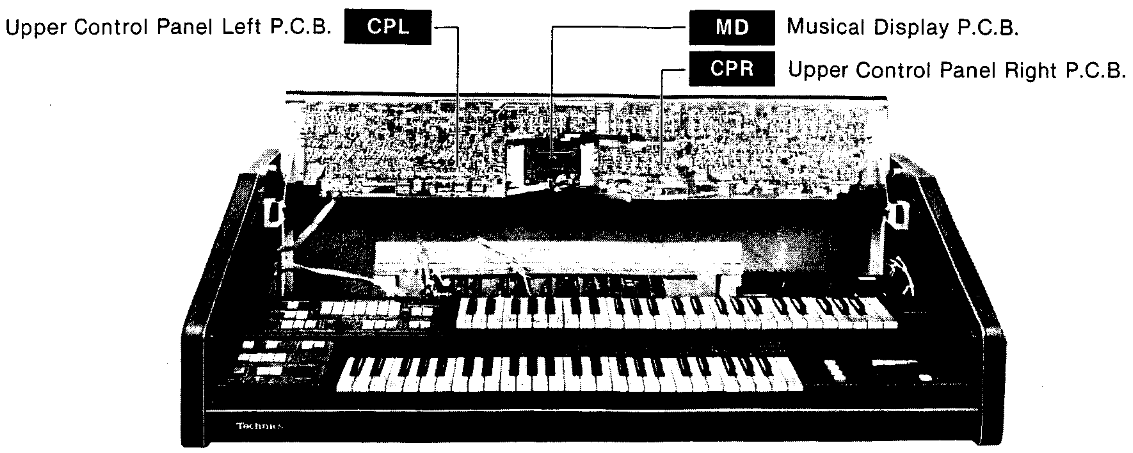


[Fig.-4]

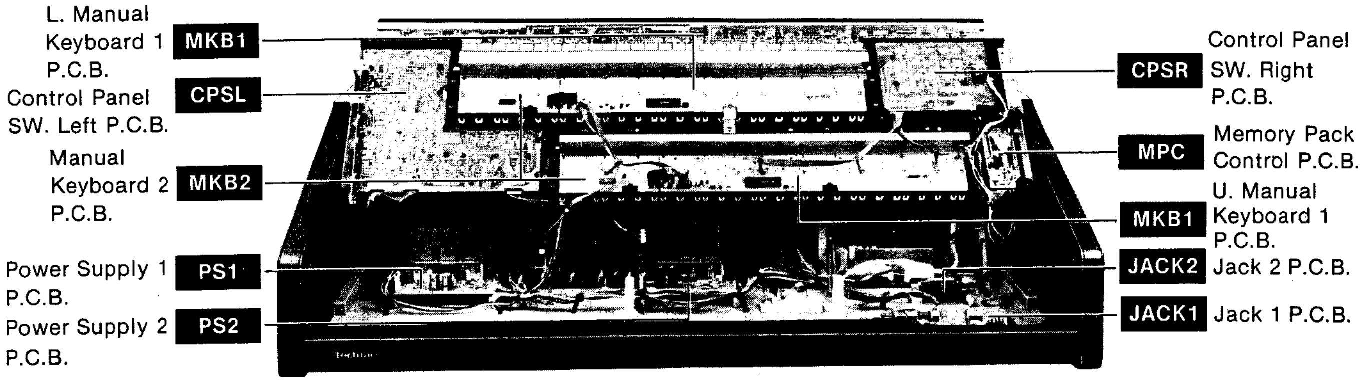
# ARRANGEMENT OF CONTROL PANEL


PCM SOUND G5
upper
harmonic coupler
cancel 2⅔ program
volume
slow attack
volume
long
tab voices
digital drawbars
percussive tone
bass
volume
U&L vocal ensemble
volume
string ensemble
upper volume
lower volume
upper organ presets
Musical Display
U&L percussive presets
harmonic control
volume
orchestral conductor
upper
lower
Voice Setting Computer
cancel
multi-tremolo/vibrato
vibrato
multi-tremolo
U&L orchestral presets
harmonic control
volume
celeste
U U&L L
lower
harmonic coupler
cancel 2' program
volume
tab voices
digital drawbars
U&L solo synthesizer presets
volume
rhythm sequencer
composer
drum percussion
volume
on mellow
rhythmic orchestra
volume
rhythmic melodic
shuffle funk rock swing rock guaracha cha-cha
march 8 beat ballad rumba mambo waltz
swing I 16 beat disco I bossa nova I samba tango
swing II samba rock disco II bossa nova II beguine
jazz waltz
tempo set
slow fast
manual
arrange percussion
fill in & intro
solo
Program Rhythm Computer
Digital Memory Pack
open
rhythm composer
combination / organ presets
rhythm sequencer & chord composer
clear
beat
2nd bar
accent/pitch
triplet
bass solo
transpose
(program)
techni-chord
on
Program Chord Computer
cancel
memory
auto play chord
record
drum percussion
beat
start / stop
synchro
foot sw
organ
tuning
free set
bass lower upper solo
Play Sequencer
upper
main volume
power
off on
U&L percussive presets
reverb
sustain
lower
bass
on
Fullband Setting Computer

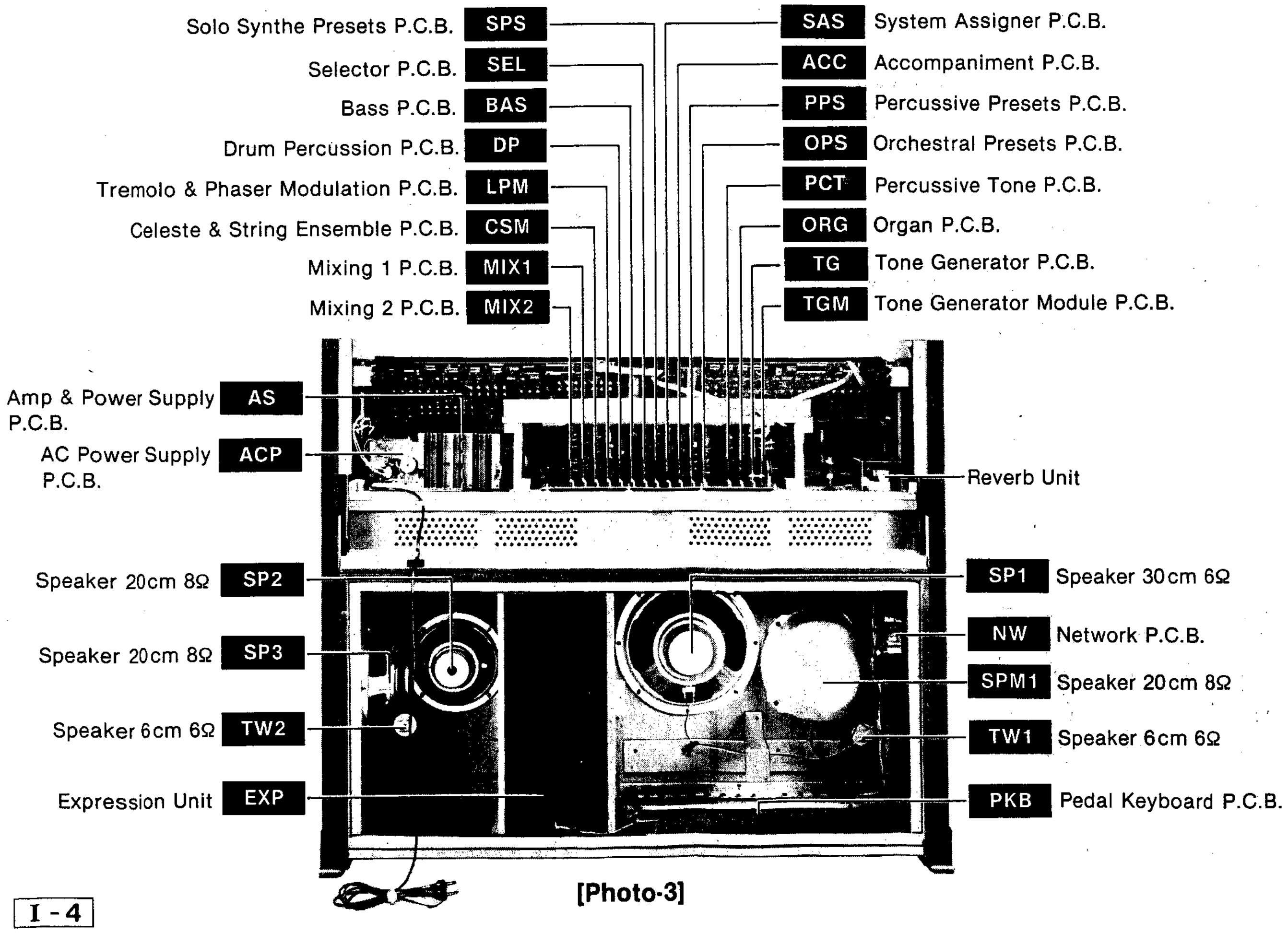
# PRINTED CIRCUIT BOARDS LOCATION


Upper Control Panel Left P.C.B. CPL
MD Musical Display P.C.B.
CPR Upper Control Panel Right P.C.B.

[Photo-1]


L. Manual Keyboard 1 P.C.B. MKB1
Control Panel SW. Left P.C.B. CPSL
Manual Keyboard 2 P.C.B. MKB2
Power Supply 1 P.C.B. PS1
Power Supply 2 P.C.B. PS2
CPSR Control Panel SW. Right P.C.B.
MPC Memory Pack Control P.C.B.
MKB1 U. Manual Keyboard 1 P.C.B.
JACK2 Jack 2 P.C.B.
JACK1 Jack 1 P.C.B.

[Photo-2]


Solo Synthe Presets P.C.B. SPS
Selector P.C.B. SEL
Bass P.C.B. BAS
Drum Percussion P.C.B. DP
Tremolo & Phaser Modulation P.C.B. LPM
Celeste & String Ensemble P.C.B. CSM
Mixing 1 P.C.B. MIX1
Mixing 2 P.C.B. MIX2
SAS System Assigner P.C.B.
ACC Accompaniment P.C.B.
PPS Percussive Presets P.C.B.
OPS Orchestral Presets P.C.B.
PCT Percussive Tone P.C.B.
ORG Organ P.C.B.
TG Tone Generator P.C.B.
TGM Tone Generator Module P.C.B.
Amp & Power Supply P.C.B. AS
AC Power Supply P.C.B. ACP
Reverb Unit
Speaker 20cm 8Ω SP2
Speaker 20cm 8Ω SP3
Speaker 6cm 6Ω TW2
Expression Unit EXP
SP1 Speaker 30cm 6Ω
NW Network P.C.B.
SPM1 Speaker 20cm 8Ω
TW1 Speaker 6cm 6Ω
PKB Pedal Keyboard P.C.B.

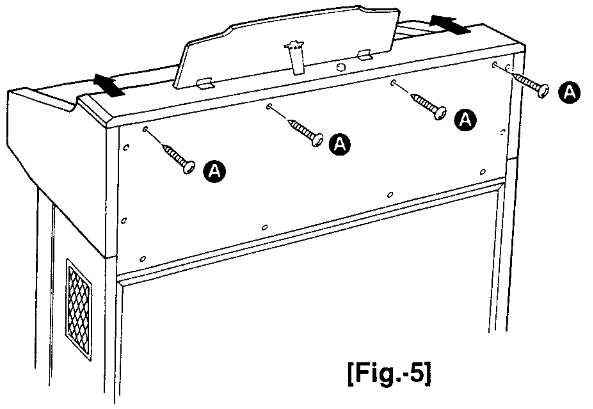
[Photo-3]

# DISASSEMBLY INSTRUCTIONS

### 1. Top Cover

a) Remove the 4 setscrews Ⓐ located on the rear board.

b) Remove the top cover, slide it forward and lift.

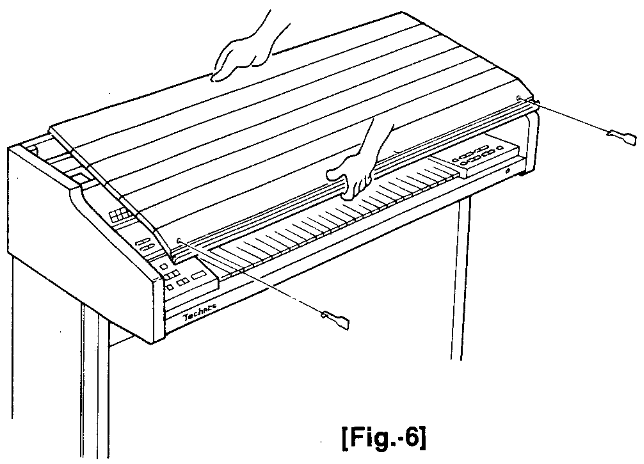


[Fig.-5]

### 2. Sliding Cover

a) Unlock the sliding cover with the accessory key.

b) After removing the top cover, remove the sliding cover in its fully-closed position.



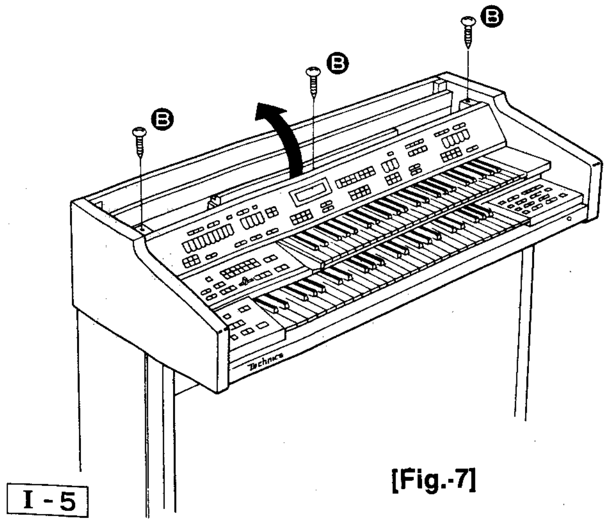
[Fig.-6]

### 3. Upper Control Panel

a) Remove both top cover and sliding cover according to steps 1 and 2.

b) Remove the 3 red screws Ⓑ which fasten the upper control panel.

c) Then the upper control panel can be opened upwards.



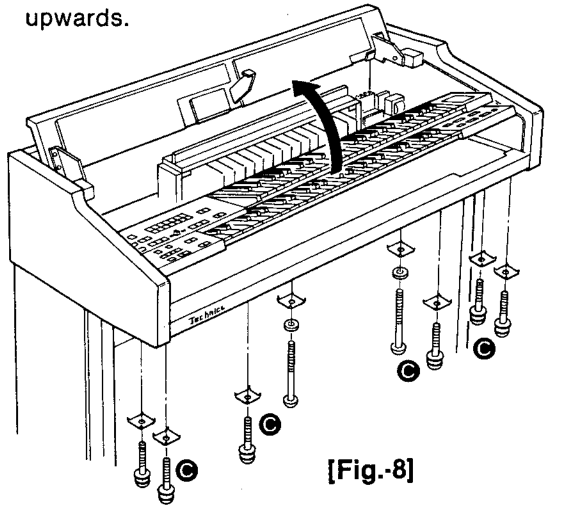
[Fig.-7]

### 4. Keyboard & End Cover Unit

a) Open the control panel according to steps 1, 2 and 3.

b) Remove the 8 setscrews Ⓒ on the bottom of the shelf-board.

c) Then the keyboard & end cover unit can be opened upwards.



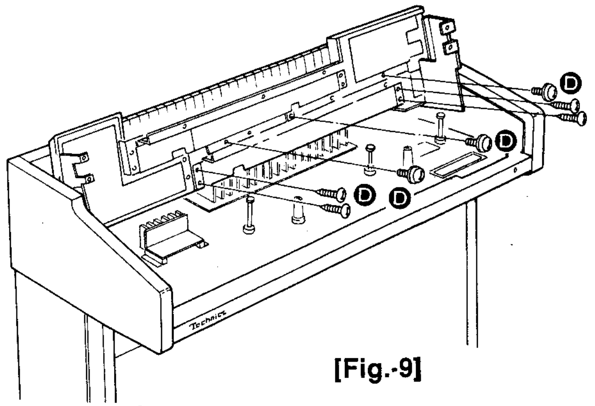
[Fig.-8]

### 5. Upper Keyboard

a) Open the keyboard & end cover unit according to step 4.

b) Remove the 7 setscrews Ⓓ which fasten the upper keyboard chassis.

c) Then the upper keyboard can be removed.



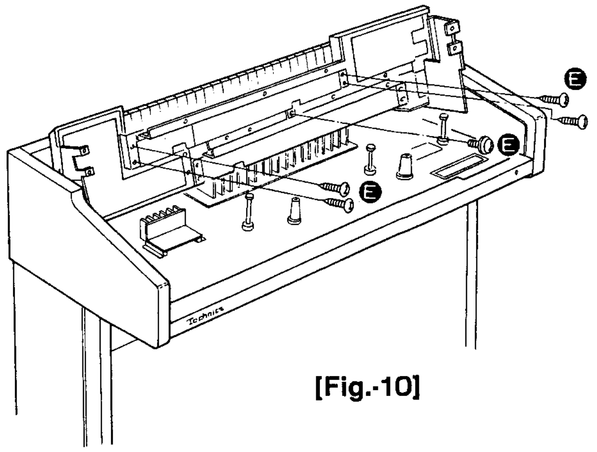
[Fig.-9]

### 6. Lower Keyboard

a) Open the keyboard & end cover unit according to step 4.

b) Remove the 5 setscrews Ⓔ which fasten the lower keyboard chassis.

c) Then the lower keyboard can be removed.

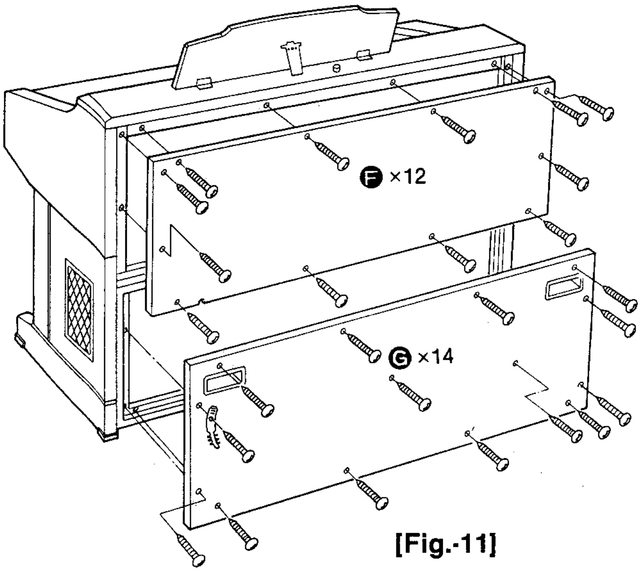


[Fig.-10]

## 7. Rear Board

a) Upper cabinet section
Remove the 12 setscrews Ⓕ on the rear board.

b) Lower cabinet section
Remove the 14 setscrews Ⓖ on the rear board.



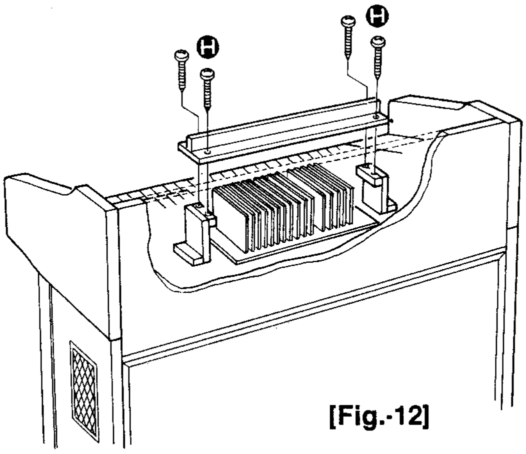
[Fig.-11]

## 8. Printed Circuit Board (Mother Board Block)

a) Open the control panel according to steps 1, 2 and 3.

b) Remove the 4 setscrews Ⓗ on the printed circuit board retainer plate.

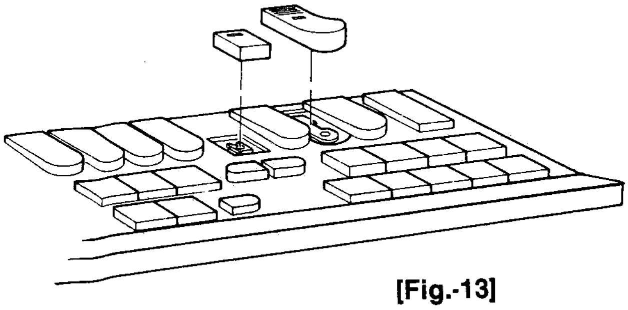
c) Each printed circuit board can be removed from the connector of the mother board.



[Fig.-12]

## 9. Buttons and knobs

a) All buttons and knobs can be pulled out.



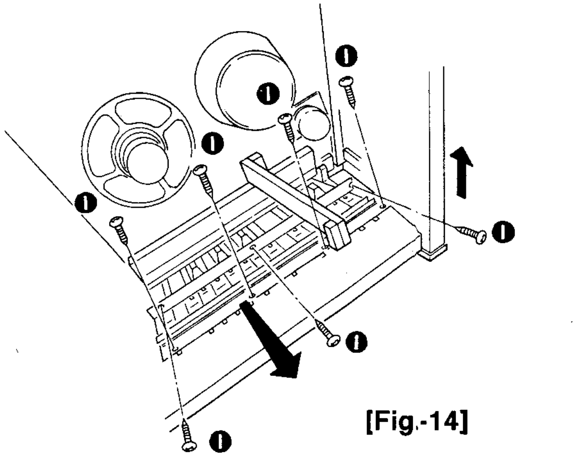
[Fig.-13]

## 10. Pedal Keyboard

a) Remove the rear board of the lower cabinet.

b) Remove the 7 setscrews Ⓘ which fasten the pedal keyboard chassis.

c) Lift the cabinet body, and remove the pedal keyboard from the bottom plate of the cabinet.



[Fig.-14]

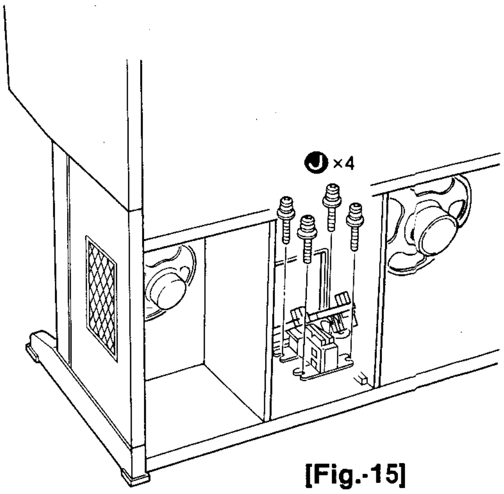
## 11. Expression Unit

a) Remove the rear board of the lower cabinet.

b) Remove the 4 setscrews Ⓙ which fasten the expression unit.

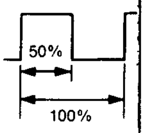
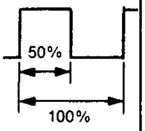
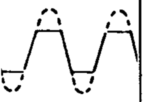
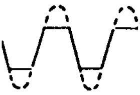
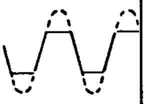
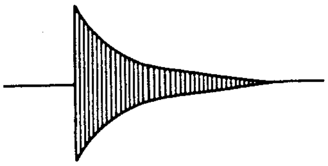
c) The expression unit can be removed.

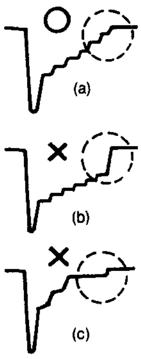
d) When replacing the expression lamp, remove the lamp retainer rubber and detach the lamp from the socket.

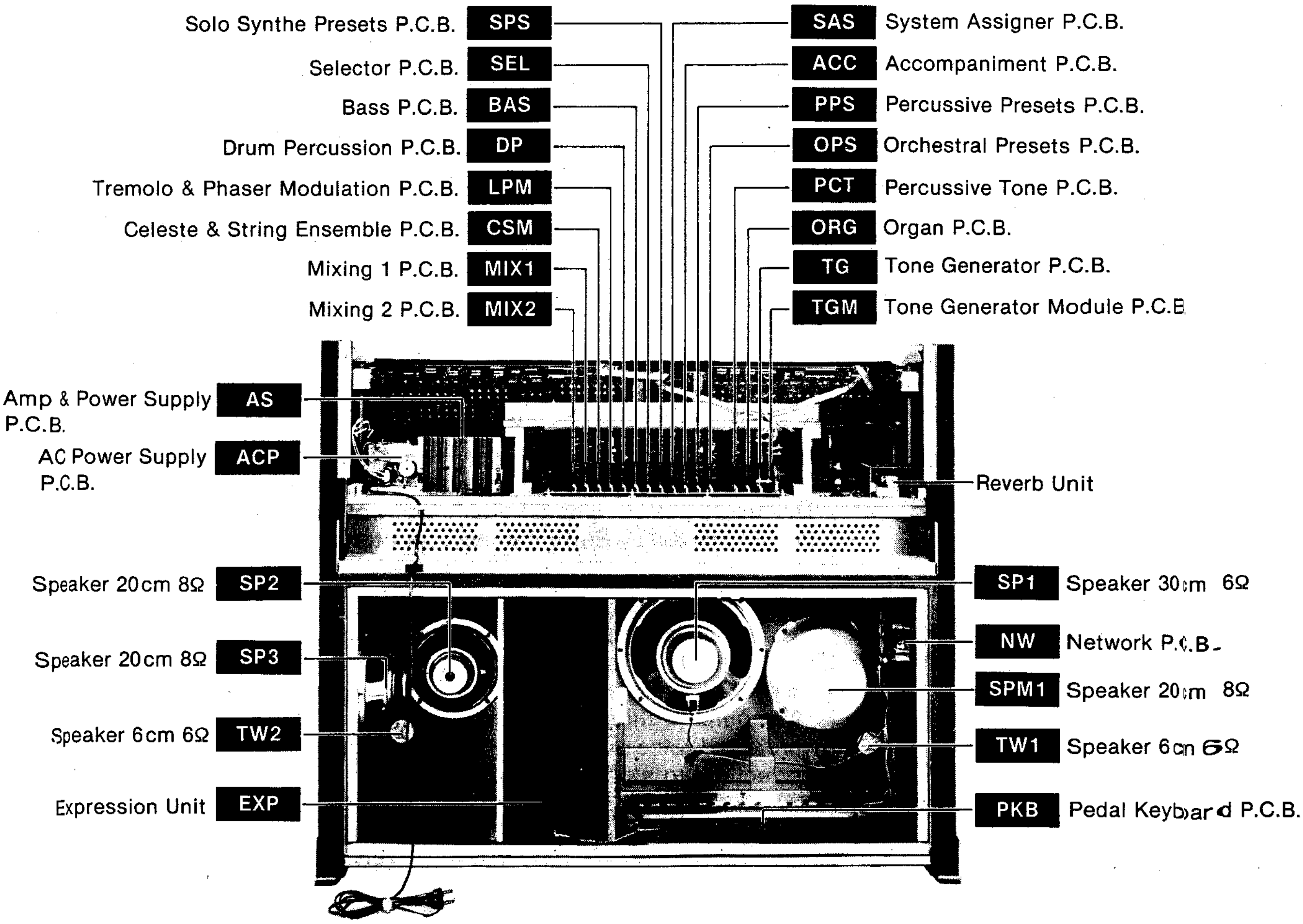


[Fig.-15]

# MEASUREMENTS AND ADJUSTMENTS

| ADJUSTMENT | SETTING | METER USED | ADJUSTMENT CIRCUIT BOARD | ADJ. POINT | CONNECT METER TO | METER READING |
|---|---|---|---|---|---|---|
| Tuning (tab) | tuning (free set) .........off<br>upper tab voices .........flute 8′<br>upper keyboard .........A3 key | Oscilloscope, (Frequency counter) | Tone Generator Circuit (TG) | VR1 | MCTC terminal (20 cm SP2 speaker) |  <br>(440 Hz) |
| | 1. Connect an oscilloscope to MCTC terminal of tone generator P.C.B. and adjust VR1 so that the duty ratio of output waveform is 50%.<br>2. Connect a frequency counter to 20 cm SP2 speaker and make the setting as mentioned here, then confirm the frequency is 440 Hz. | | | | | |
| Tuning (mono-tone) | tuning (free set) .........off<br>pedal voices ............bass 8′<br>pedal keyboard .........A1 key | Oscilloscope, (Frequency counter) | Tone Generator Circuit (TG) | VR2 | MCMC terminal (20 cm SP2 speaker) |  <br>(110 Hz) |
| | 1. Connect an oscilloscope to MCMC terminal of tone generator P.C.B. and adjust VR2 so that the duty ratio of output waveform is 50%.<br>2. Connect a frequency counter to 20 cm SP2 speaker and make the setting as mentioned here, then confirm the frequency is 110 Hz. | | | | | |
| Output level (manual) | upper tab voices .........flute 16′, 8′, 4′<br>upper volume ............max<br>main volume ............max<br>expression pedal ......max<br>celeste ......................u. tab voices<br>upper keyboard .........C5, E5, G5 | Electric voltmeter | Mixing 2 Circuit (MIX2) | VR1 | 30 cm SP1 speaker | 1.0 Vrms |
| | | | | VR2 | 20 cm SP2 speaker | 1.5 Vrms |
| | | | | VR3 | 20 cm SP3 speaker | 2.1 Vrms |
| BBD bias (Celeste) | upper tab voices .........celeste<br>upper keyboard .........on | Oscilloscope, Oscillator | Celeste & String Ensemble Circuit (CSM) | VR1 | Check point ⑮ |  |
| | 1. Connect the oscilloscope to check point ⑮ of CSM circuit.<br>2. Disconnect the lead terminal of capacitor C11 (50V 1) connect to No. 7 pin of IC1-1, and input 1 kHz sine wave there. Then, adjust the output level of oscillator until the output waveforms of check point ⑮ is clipped.<br>3. Adjust VR1 so that the output waveforms on the oscilloscope are evenly clipped at peak and bottom. | | | | | |
| BBD bias (String ensemble) | upper string Ensemble ...on<br>upper keyboard ............on | Oscilloscope, Oscillator | Celeste & String Ensemble Circuit (CSM) | VR2 | Check point ㉔ |  |
| | 1. Connect the oscilloscope to check point ㉔ of CSM circuit.<br>2. Disconnect the lead terminal of capacitor C15 (0.022) connect to No. 7 pin of IC3-1, and input 1 kHz sine wave there. Then, adjust the output level of oscillator until the output waveform of check point ㉔ is clipped.<br>3. Adjust VR2 so that the output waveforms on the oscilloscope are evenly clipped at peak and bottom. | | | | | |
| BBD bias (Tremolo) | upper tab voices .........tremolo<br>upper keyboard .........on | Oscilloscope, Oscillator | Tremolo & Phaser Modulation Circuit (LPM) | VR1 | Check point ⑲ |  |
| | 1. Connect the oscilloscope to check point ⑲ of LPM circuit.<br>2. Disconnect the lead terminal of capacitor C52 (50V 1) connect to No. 1 pin of IC19-1, and input 1 kHz sine wave there. Then, adjust the output level of oscillator until the output waveform of check point ⑲ is clipped.<br>3. Adjust VR1 so that the output waveforms on the oscilloscope are evenly clipped at peak and bottom. | | | | | |
| Vibraphone click | percussive presets ......vibraphone<br>upper keyboard .........on | Oscilloscope | Percussive Presets Circuit (PPS) | VR1 | Check point ⑧ | |
| | 1. Connect the oscilloscope to check point ⑧ of PPS circuit.<br>2. Adjust VR1 so that the waveform on the oscilloscope is equal in level between top and bottom when the key of upper keyboard is turned ON.<br> | | | | | |

| ADJUSTMENT | SETTING | METER USED | ADJUSTMENT CIRCUIT BOARD | ADJ. POINT | CONNECT METER TO | METER READING |
|---|---|---|---|---|---|---|
| Orchestral presets envelope | orchestral presets ......wah brass<br>harmonic control ......center<br>upper keyboard ..........C4 key | Oscilloscope | Orchestral Presets Circuit (OPS) | VR1 | Check point ⑱ |  |
|  | 1. Set the organ to the above-mentioned conditions.<br>2. Connect the oscilloscope to check point ⑱ of OPS circuit.<br>3. Adjust VR1 so that the envelope waveform of wah brass is as shown in Fig. (a) on the right when C4 key of upper keyboard is turned ON. |  |  |  |  |  |
| Reverb depth | upper tab voices .........flute 16′, 8′, 4′<br>upper volume ............max<br>reverb .....................max<br>upper keyboard .........C3~B3 (only for natural keys) | Electric Voltmeter | Mixing 1 Circuit (MIX2) | VR1 | Check point ⑰ | 150 mVrms |
| Click level (orchestral conductor) | main volume ...........max<br>expression pedal ......max | — | Selector Circuit (SEL) | VR1 | Adjust to the minimum click sound by hearing. |  |
|  | Adjust VR1 of SEL circuit so that the click sound may be the minimum by hearing when the tab voice of upper orchestral conductor and percussive presets button are changed over. (Turn on the key to open the signal gate before this adjustment.) |  |  |  |  |  |


Solo Synthe Presets P.C.B. SPS
Selector P.C.B. SEL
Bass P.C.B. BAS
Drum Percussion P.C.B. DP
Tremolo & Phaser Modulation P.C.B. LPM
Celeste & String Ensemble P.C.B. CSM
Mixing 1 P.C.B. MIX1
Mixing 2 P.C.B. MIX2
SAS System Assigner P.C.B.
ACC Accompaniment P.C.B.
PPS Percussive Presets P.C.B.
OPS Orchestral Presets P.C.B.
PCT Percussive Tone P.C.B.
ORG Organ P.C.B.
TG Tone Generator P.C.B.
TGM Tone Generator Module P.C.B
Amp & Power Supply P.C.B. AS
AC Power Supply P.C.B. ACP
Reverb Unit
Speaker 20cm 8Ω SP2
Speaker 20cm 8Ω SP3
Speaker 6cm 6Ω TW2
Expression Unit EXP
SP1 Speaker 30cm 6Ω
NW Network P.C.B.
SPM1 Speaker 20cm 8Ω
TW1 Speaker 6cm 6Ω
PKB Pedal Keyboard P.C.B.

# PRECAUTION FOR REPAIR

■ Trouble often occur due to faulty operation of your electronic organ if you are not completely familiar with its mechanisms. Therefore, if your organ shows the following symptoms, please check the instrument before repair.

| Phenomenon | Cause and remedy |
|---|---|
| The buttons, tablets, keyboards, etc. malfunction. | • Press the Fullband Setting Computer button first to turn it on and then depress the initial key on the lower keyboard.<br>• If the buttons, tablets, keyboards, etc. do not return to normal, turn the power switch off once, then turn on again. |
| Voices of flute tablets do not sound. | The flute volume levels are adjustable for each individual tablet. If set to 0, however, the voice of the tablet will not sound. Adjust the flute tablets to the desired levels. |
| Different voices are heard in the lower and upper half keys on the upper keyboard. | The lower portion of the upper manual keyboard is used to sound the lower manual voices when the lower manual keyboard is required for programming functions. |
| A rhythm does not start or no rhythm sounds. | • No rhythm sounds if the drum percussion on button is turned off.<br>• If the PCC button has no stored chords. No rhythm will start when turned on. Press the cancel button.<br>• If the Composer button has no stored rhythm patterns, no rhythm will sound. Select other rhythm buttons. |
| Rhythm tempo control remains inoperative. | When the tempo set button is turned on:<br>• The tempo control does not operate if the fine button is turned off.<br>• If the fine button is turned on, fine adjustment possible in the tempo control. Press the tempo set buttons I and II simultaneously to turn them off. This allows the rhythm tempo to be adjusted with the tempo control. |
| The knee lever, foot switches and fullbass pedal do not operate properly. For example, the knee lever does not turn the sustain function on and off. | Any functional on and off operation other than the factory-presets are storable in these switches. For example, the knee lever can turn the Techni-Chord on and off. Store your favorite functions to turn them on and off. |
| The fast multi-tremolo speed is improper. | The fast multi-tremolo speed is preadjustable. Adjust to your favorite speed. |
| Not turning ON if the slow/fast tablet of multi-tremolo or techni-chord ON button is pressed. | If these functions are programmed in the knee lever and the knee lever is in raised position, these tablet and button are not turned on. When the knee lever is tilted down, the tablet and button can be turned on and off. |
| The contents of the Transpose, Program Chord Computer, Fullband Setting Computer, etc. cannot be stored. | After pressing the record, depress the necessary buttons within 5 seconds. The record button turns off after a lapse of 5 seconds, making storage operation impossible. Press the record button again. |
| When storing the created tones and effects in the Voice Setting Computer, voices other than those desired are stored. | • To store your created tones and effects, press the I to VII buttons of the Voice Setting Computer while the record button is held down.<br>• To select your favorite voice from the 20 factory-preset voices, press the record button and depress one of the I to VII buttons on the Voice Setting Computer within 5 seconds. Then press the key corresponding to the preferred voice of the keys 1 to 20 on the lower keyboard. Finally press the selected I to VII button again. |
| Storage is not possible with the Program Chord Computer. | • Check that the PCC button is slowly flashing. Pressing the Fingered Mode button turns off the record button, making storage operation impossible.<br>• Do not release the left hand (Chord designation) before pressing the measure keys (├⌒┤, ├┼┤, and ├┼┼┤) keys. |

| Phenomenon | Cause and remedy |
|---|---|
| When the rhythm stored in the Rhythm Composer is played, the Rhythmic Orchestra and automatic bass accompaniment do not sound. | • Store patterns in the rhythmic and melodic buttons of the Rhythmic Orchestra, just as you would with other rhythmic instrumental effects.<br>• The bass of auto play chord sounds with a drum bass, which should be stored. |
| Programs cannot be stored in the Play Sequencer or the Full-band Setting Computer or playback is not possible. | • These functions need a digital memory pack. Insert the memory pack in the slot to the right of the upper keyboard.<br>• Storage is not possible if the memory protector on the memory pack is turned on. Turn it off during storage operation. |
| The stored registration cannot be used when performance is started with the Play Sequencer button turned on. | To use the stored registration, turn on the Fullband Setting Computer button and then press the 1 key on the lower keyboard. |
| The stored introduction is not reproduced during automatic performance. | • Set the beginning of a song, such as an introduction before turning on the record button.<br>• To add an introduction after the record button and Play Sequencer button flash, set it after turning on the Fullband Setting Computer button. Then turn off the Fullband Setting Computer button. |
| No storage is possible even when the record button and Play Sequencer button are slowly flashing. | • No storage is possible when the Fullband Setting Computer button is turned on. Turn it off before playing.<br>• If any Play Sequencer button is lit, press the start/stop button for automatic performance of the stored part. Another part can then be stored. |
| The quick rhythm tempo is delayed when the Play Sequencer is used. | This occurs when too many tones are played at one time.<br>Slow down the tempo (to about ♩ =250) or reduce the number of tones played at a time. |
| Different tones and effects are stored in the Fullband Setting Computer (FSC). | If the Voice Setting Computer (VSC) function is selected, the stored contents in this button are stored into the FSC.<br>When the tones and effects selected by the VSC are changed, store them in the VSC again before storage in the FSC. |
| The cabinet and slide cover become heated to some degree. | The Technics organ has a built-in power source that heats the cabinet and slide cover to some degree. This is not an indication of trouble. |
| Nine or more keys of upper or lower keyboard are simultaneously depressed, only 8 keys make sound. | It is designed so that upper and lower keyboards can make sound only up to 8 keys when harmonic coupler is not provided.<br>• Priority is given to 8 keys of higher-pitched sound. |
| Upper or lower keyboard makes sound only to 4 tones. | With harmonic coupler provided, each keyboard can simultaneously sound only up to 4 tones.<br>• Priority is given to 4 keys of higher-pitched sound. |
| To octave sounds of flute 2′, $1^1/_3$′, 1′ are repeated. | The top octave C key of flute 2′, F~C keys (8 keys) in the top octave part of flute $1^1/_3$′, and top octave keys (C~C) of flute 1′ are designed to be repeated. |

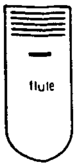
# REGISTRATION FOR 20 ORGAN PRESETS

Organ notes of 20 kinds are preset in keys 1~20 of the lower keyboard. The combinations of 20 organ presets are shown in the table below.

* Some of the combinations contain tones or effects not obtainable with tablets.

| Organ Presets | | Flute Level | | | | | | | | | | String | | Slow Attack | Upper Volume | Harmonic Coupler | Percussive Tone | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 16' | 10 2/3' | 8' | 5 1/3' | 4' | 2 2/3' | 2' | 1 1/3' | 1' | 2/3' | 8' | 4' | | | | 5 1/3' | 4' | 2 2/3' | 2' | click | volume |
| Pop Organ | 1 | 5 | | 7 | | 6 | | 5 | | 4 | | | | | 3 | | | | | | | |
| | 2 | 5 | | 7 | 7 | | 7 | | 2 | 1 | | | | | 3 | | | | | | | |
| | 3 | 5 | | 7 | | | 5 | | | | | | | | 3 | | | | | | | |
| | 4 | | | 7 | | 7 | 7 | | | | | | | | 3 | | | | ○ | | | 3 |
| | 5 | 7 | | | | | | | | | | | | | 3 | | | ○<br>long | | | | 4 |
| Jazz Rock Organ | 6 | 7 | | 7 | 7 | | | | | | | | | | 3 | | ○ | | ○ | | ○ | 3 |
| | 7 | 7 | | 7 | 7 | 3 | 2 | 1 | 1 | 1 | | | | | 3 | | | | ○ | | ○ | 3 |
| | 8 | 7 | | 7 | | | | | | | | | | | 3 | | | | ○ | | ○ | 3 |
| | 9 | 7 | | 7 | 7 | | | | 7 | 7 | | | | | 3 | | | | | | ○ | 3 |
| | 10 | 7 | | | | | | | 7 | 7 | | | | | 3 | | | | | | ○ | 3 |
| Classical Organ | 11 | slow attack<br>7 | | 7 | | 7 | 4 | 7 | 3 | 7 | 7 | | | ○<br>(16', 8') | 3 | | | | | | | |
| | 12 | 7 | | 7 | | 7 | | 7 | | 7 | | | ○ | | 3 | | | | | | | |
| | 13 | 7 | | | | slow attack | | | 7 | 7 | | | ○ | ○ | 3 | | | | | | | |
| | 14 | slow attack | | 7 | | | | 7 | | 3 | | | | ○<br>(8') | 3 | | | | | | | |
| | 15 | slow attack | | 7 | | | 7 | | | | | | | ○<br>(8') | 3 | | | | | | | |
| Special Organ | 16 | 7 | | | | decay | 7 | | | 7 | | | | | 3 | | | | ○ | | | 3 |
| | 17 | 7 | 7 | slow attack | | decay | | decay<br>7 | | decay<br>7 | | decay | | | 3 | | | | 1 3/5'<br>○ | 1 1/3'<br>○ | | 3 |
| | 18 | 7 | | 7 | 7 | decay | | decay | | decay<br>7 | | decay | ○ | | 3 | program | | | ○ | | ○ | 3 |
| | 19 | 7 | | | | 7 | | | | 7 | | | | | 3 | program | | | | ○ | | 3 |
| | 20 | 7 | | | | 7 | | | | | | | ○ | | 3 | program | ○ | | | | | 3 |

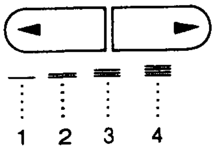
- **Flute Volume Adjustment**



Pressing here decrease volume by one step.

Pressing here increase volume by one step.
(Volume levels can be adjusted in 7 steps).

- **Volume Level**



- Pressing the **initial** key turns off all the tablets and buttons.

# REGISTRATION FOR 20 COMBINATION VSC

Combination of original tones and effects are preset in this unit. You can select the desired tones by the lower keyboard keys marked with 1~20, and store them by use of buttons I, II, III, IV, V, VI and VII of the voice setting computer.

The tones mentioned below are preset in the keyboard (1~20). The combinations of the selected tones and effects are displayed by LED's on the control panel. The $\boxed{\phantom{xx}}$ area marked tones and effects are not displayed on the control panel.

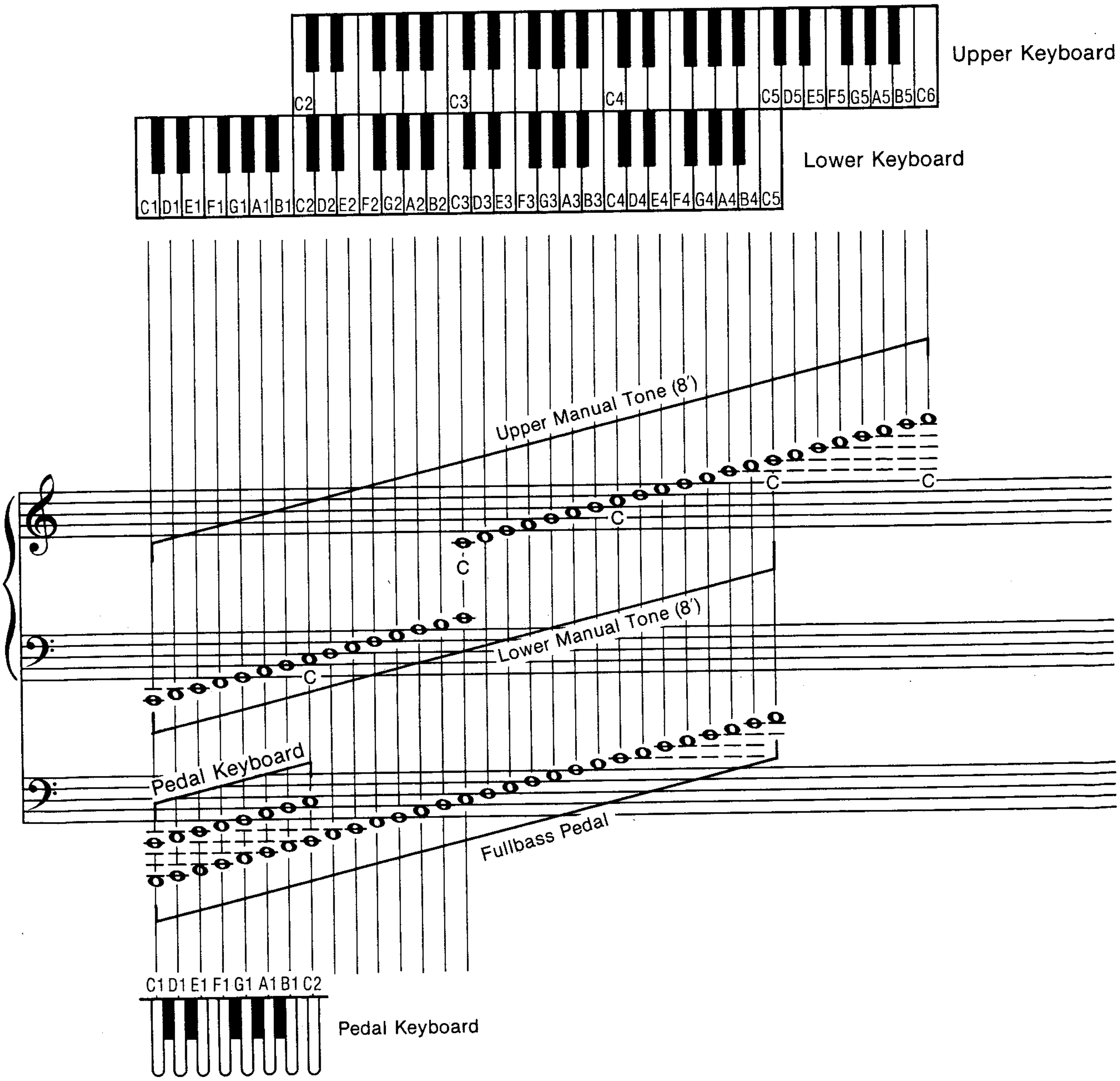
| | Combination VSC | Orchestral Conductor | Upper | Lower | Bass | Effect |
|---|---|---|---|---|---|---|
| 1 | **Theater Organ** | Upper: upper tab voices<br>Lower: lower tab voices | • tab voices: flute 16′, 8′, 4′, 2′, 1′<br>• upper volume: step 3 | • tab voices: flute 8′, 4′, 2′<br>• lower volume: step 3 | • bass tones: bass 16′, 8′<br>• bass volume: step 3 | • multi-tremolo (fast): U. tab voices<br>L. tab voices<br>• sustain: U. tab...step 2<br>bass ...step 3<br>• reverb: step 3 |
| 2 | **Church Organ** | Upper: upper tab voices<br>Lower: lower tab voices | • tab voices: flute 16′, 8′, 4′, $2^{2}/_{3}$′, 2′, $1^{1}/_{3}$′, 1′<br>string 8′<br>• slow attack: flute 16′, 8′, string 8′<br>• upper volume: step 3<br>* When the slow attack button of upper tab voice is turned OFF, tones other than flute 16′, 8′ and $5^{1}/_{3}$′ are shifted to "decay" mode. | • tab voices: flute 8′, 4′, 2′, $\boxed{1'}$<br>$\boxed{\text{slow attack}}$<br>• lower volume: step 3 | • bass tones: bass 16′, 8′<br>• bass volume: step 3 | • multi-tremolo (slow): U. tab voices<br>L. tab voices<br>• celeste: U. tab voices<br>• $\boxed{\text{chorus: L. tab voices}}$<br>• sustain: bass...step 3<br>• reverb: step 4 |
| 3 | **Pop Organ I** | Upper: upper tab voices<br>Lower: lower tab voices | • tab voices: flute 16′, $2^{2}/_{3}$′<br>• volume: step 3<br>• percussive tone: $2^{2}/_{3}$′<br>• volume: step 3 | • tab voices: flute 8′, 4′<br>• lower volume: step 3 | • bass tones: bass 16′, 8′<br>• bass volume: step 3 | • multi-tremolo (slow): U. tab voices<br>• celeste: L. tab voices<br>• sustain: bass...step 3<br>• reverb: step 3 |
| 4 | **Pop Organ II** | Upper: upper tab voices<br>Lower: lower tab voices | • tab voices: flute 16′, 4′<br>$\boxed{\text{decay...flute 4'}}$<br>• volume: step 3<br>• percussive tone: 4′<br>• volume: step 3 | • tab voices: flute 8′, 4′<br>• lower volume: step 3 | • bass tones: bass 16′, 8′<br>• bass volume: step 3 | • multi-tremolo (slow): U. tab voices<br>L. tab voices<br>• sustain: U. tab (flute 4′)...step 2<br>bass ..............step 3<br>• reverb: step 3 |
| 5 | **Rock Organ** | Upper: upper tab voices<br>Lower: percussive presets | • tab voices: flute 16′, 8′, $5^{1}/_{3}$, 4′, $2^{2}/_{3}$′,<br>2′, $1^{1}/_{3}$′, 1′<br>• volume: step 3<br>• harmonic coupler: $2^{2}/_{3}$′<br>• percussive tones: $\boxed{5^{1}/_{3}'}$, 4′, $2^{2}/_{3}$′<br>• volume: step 3 | • percussive presets: electric piano<br>• harmonic control: center<br>• volume: step 3 | • bass tone: electric bass<br>• bass volume: step 3 | • multi-tremolo (slow): U. tab voices<br>• celeste: U. tab voices<br>• sustain: bass...step 3<br>• reverb: step 3 |
| 6 | **Jazz Organ** | Upper: upper tab voices<br>Lower: percussive presets | • tab voices: flute 16′, 8′, $5^{1}/_{3}$′<br>• volume: step 3<br>• percussive tones: $\boxed{5^{1}/_{3}'}$, $2^{2}/_{3}$′, click<br>• volume: step 3 | • percussive presets: jazz guitar<br>• harmonic control: center<br>• volume: step 2 | • bass tone: acoustic bass<br>• bass volume: step 3 | • multi-tremolo (slow): U. tab voices<br>• sustain: bass...step 3<br>• reverb: step 3 |
| 7 | **Classical Strings** | Upper: upper tab voices<br>string ensemble<br>Lower: lower tab voices<br>string ensemble | • tab voices: string 8′, 4′<br>• slow attack<br>• volume: step 4<br>• string ensemble<br>• volume: step 3 | • tab voices: flute 8′, string 8′, 4′<br>$\boxed{\text{slow attack}}$<br>• volume: step 3<br>• string ensemble<br>• volume: step 3 | • bass tones: bass 16′, 8′<br>• bass volume: step 3 | • vibrato: U. tab voices<br>L. tab voices<br>• celeste: U. tab voices<br>L. tab voices<br>• sustain: U. tab...step 3<br>bass ...step 3<br>• reverb: step 4 |
| 8 | **Symphonic Ensemble** | Upper: upper tab voices<br>string ensemble<br>solo synthe presets<br>Lower: lower tab voices<br>percussive presets<br>string ensemble | • tab voices: flute 16′, 8′, 4′, 2′, 1′<br>string 4′<br>• volume: step 4<br>• string ensemble<br>• volume: step 4<br>• solo synthe presets: flute<br>• volume: step 4 | • tab voices: flute 8′, 4′, 2′, $\boxed{1'}$<br>string 8′, 4′<br>• volume: step 4<br>• percussive presets: harpsichord<br>• harmonic control: bright<br>• volume: step 3<br>• string ensemble<br>• volume: step 3 | • bass tones: bass 16′, 8′<br>• bass volume: step 4 | • multi-tremolo (slow): U. tab voices<br>L. tab voices<br>• celeste: U. tab voices<br>L. tab voices<br>$\boxed{\text{L. percussive presets}}$<br>• sustain: U. tab...step 3<br>L. percussive presets...step 3<br>bass ...step 3<br>• reverb: step 4 |
| 9 | **Pop Ensemble I** | Upper: upper tab voices<br>percussive presets<br>Lower: lower tab voices | • tab voices: flute 8′, 1′<br>• slow attack<br>• volume: step 3<br>• percussive presets: electric piano<br>• harmonic control: center<br>• volume: step 4 | • tab voices: flute 8′, 4′<br>• volume: step 3 | • bass tone: electric bass<br>• bass volume: step 3 | • multi-tremolo (slow): U. tab voices<br>• celeste: $\boxed{\text{U. percussive presets}}$<br>L. tab voices<br>• sustain: U. tab...step 3<br>bass ...step 3<br>• reverb: step 3 |
| 10 | **Pop Ensemble II** | Upper: string ensemble<br>solo synthe presets<br>Lower: string ensemble<br>percussive presets | • string ensemble<br>• volume: step 3<br>• solo synthe presets: pan flute<br>• volume: step 3 | • string ensemble<br>• volume: step 3<br>• percussive presets: harpsichord<br>• harmonic control: center<br>• volume: step 3 | • bass tone: acoustic bass<br>• bass volume: step 3 | • sustain: bass...step 3<br>• reverb: step 3 |

| Combination VSC | | Orchestral Conductor | Upper | Lower | Bass | Effect |
|---|---|---|---|---|---|---|
| 11 | **Soft Brass** | Upper: orchestral presets<br>solo synthe presets<br>Lower: percussive presets | • orchestral presets: trombone<br>• harmonic control: mellow<br>• volume: step 3<br>• solo synthe presets: trumpet<br>• volume: step 3 | • percussive presets: jazz guitar<br>• harmonic control: center<br>• volume: step 3 | • bass tone: acoustic bass<br>• bass volume: step 3 | • celeste: U. orchestral presets<br>U. solo synthe presets<br>• chorus: L. percussive presets<br>• sustain: bass...step 3<br>• reverb: step 3 |
| 12 | **Big Band Brass** | Upper: orchestral presets<br>solo synthe presets<br>Lower: percussive presets | • orchestral presets: saxophone<br>• harmonic control: bright<br>• volume: step 4<br>• solo synthe presets: saxophone<br>• volume: step 4 | • percussive presets: acoustic piano<br>• harmonic control: bright<br>• volume: step 3 | • bass tone: electric bass<br>• bass volume: step 3 | • celeste: U. orchestral presets<br>• sustain: bass...step 3<br>• reverb: step 2 |
| 13 | **Marching Brass** | Upper: orchestral presets<br>solo synthe presets<br>Lower: lower tab voices<br>percussive presets | • orchestral presets: trombone<br>• harmonic control: bright<br>• volume: step 4<br>• solo synthe presets: trombone<br>• volume: step 4 | • tab voices: flute 8′, 4′, 2′<br>• volume: step 3<br>• percussive presets: banjo<br>• harmonic control: bright<br>• volume: step 3 | • bass tone: tuba<br>• bass volume: step 3 | • celeste: U. orchestral presets<br>L. tab voices<br>• multi-tremolo (slow): L. tab voices<br>• sustain: bass...step 2<br>• reverb: step 2 |
| 14 | **Synthe Brass** | Upper: orchestral presets<br>solo synthe presets<br>Lower: percussive presets | • orchestral presets: wah brass<br>• harmonic control: center<br>• volume: step 4<br>• solo synthe presets: saxophone<br>key bender<br>• volume: step 2 | • percussive presets: clavi<br>• harmonic control: center<br>• volume: step 3 | • bass tone: electric bass<br>• bass volume: step 3 | • celeste: U. orchestral presets<br>• phaser: L. percussive presets<br>• chorus: U. solo synthe presets<br>• sustain: bass...step 3<br>• reverb: step 3 |
| 15 | **Fusion Guitar** | Upper: orchestral presets<br>solo synthe presets<br>Lower: percussive presets | • orchestral presets: clarinet<br>• harmonic control: center<br>• volume: step 2<br>• solo synthe presets: cosmic<br>key bender<br>• volume: step 4 | • percussive presets: electric piano<br>• harmonic control: center<br>• volume: step 3 | • bass tone: electric bass<br>• bass volume: step 3 | • chorus: U. solo synthe presets<br>• phaser: U. orchestral presets<br>• celeste: L. percussive presets<br>• sustain: bass...step 3<br>• reverb: step 2 |
| 16 | **New Wave** | Upper: orchestral presets<br>solo synthe presets<br>Lower: percussive presets | • orchestral presets: trombone<br>• harmonic control: bright<br>• volume: step 3<br>• solo synthe presets: cosmic<br>• volume: step 3 | • percussive presets: electric piano<br>• harmonic control: bright<br>• volume: step 3 | • bass tone: electric bass<br>• bass volume: step 3 | • celeste: U. orchestral presets<br>• phaser: U. solo synthe presets<br>L. percussive presets<br>• sustain: bass...step 3<br>• reverb: step 2 |
| 17 | **Funk Rock** | Upper: orchestral presets<br>solo synthe presets<br>Lower: lower tab voices<br>percussive presets | • orchestral presets: synthe brass<br>• harmonic control: mellow<br>• volume: step 4<br>• solo synthe presets: synthe chopper<br>key bender<br>• volume: step 4 | • tab voices: flute 8′, 1′,<br>string 8′<br>• volume: step 3<br>• percussive presets: clavi<br>• harmonic control: bright<br>• volume: step 3 | • bass tone: electric bass<br>• bass volume: step 3 | • multi-tremolo (slow): L. tab voices<br>• chorus: U. orchestral presets<br>• phaser: U. solo synthe presets<br>L. tab voices<br>L. percussive presets<br>• sustain: bass...step 3<br>• reverb: step 2 |
| 18 | **Jazz Guitar Combo** | Upper: percussive presets<br>solo synthe presets<br>Lower: lower tab voices<br>orchestral presets<br>string ensemble | • percussive presets: jazz guitar<br>• harmonic control: bright<br>• volume: step 4<br>• solo synthe presets: flute<br>• volume: step 4 | • tab voices: flute 8′, 4′<br>• volume: step 3<br>• orchestral presets: saxophone<br>• harmonic control: mellow<br>• volume: step 2<br>• string ensemble<br>• volume: step 2 | • bass tone: acoustic bass<br>• bass volume: step 3 | • multi-tremolo (slow): L. tab voices<br>• chorus: U. percussive presets<br>L. orchestral presets<br>• celeste: L. tab voices<br>• sustain: bass...step 3<br>• reverb: step 3 |
| 19 | **Mix Combo** | Upper: percussive presets<br>solo synthe presets<br>Lower: lower tab voices<br>orchestral presets | • percussive presets: acoustic piano<br>• harmonic control: bright<br>• volume: step 3<br>• solo synthe presets: clarinet<br>• volume: step 4 | • tab voices: flute 8′, 4′, 2′<br>• volume: step 3<br>• orchestral presets: trombone<br>• harmonic control: mellow<br>• volume: step 3 | • bass tone: electric bass<br>• bass volume: step 3 | • multi-tremolo (slow): L. tab voices<br>• chorus: U. percussive presets<br>• celeste: L. tab voices<br>L. orchestral presets<br>• sustain: bass...step 3<br>• reverb: step 2 |
| 20 | **Modern Barogue** | Upper: upper tab voices<br>solo synthe presets<br>string ensemble<br>Lower: lower tab voices<br>percussive presets | • tab voices: flute 16′, 8′, 4′, 2′, 1′<br>• volume: step 4<br>• solo synthe presets: trumpet<br>• volume: step 3<br>• string ensemble<br>• volume: step 2 | • tab voices: flute 8′, 4′, 2′<br>• volume: step 3<br>• percussive presets: harpsichord<br>• harmonic control: bright<br>• volume: step 3 | • bass tones: bass 16′, 8′<br>• bass volume: step 3 | • multi-tremolo (slow): U. tab voices<br>L. tab voices<br>• celeste: U. tab voices<br>L. tab voices<br>• phaser: L. percussive presets<br>• sustain: bass...step 3<br>• reverb: step 2 |

# KEYBOARD RANGES

| | | |
|---|---|---|
| Upper Keyboard ............ | 49 Keys | (4 Octaves) |
| Lower Keyboard ............ | 49 Keys | (4 Octaves) |
| Pedal Keyboard ............. | 13 Keys | (1 Octave) |

* An 8-feet compass is used for each keyboard.


Upper Keyboard
C2
C3
C4
C5 D5 E5 F5 G5 A5 B5 C6
Lower Keyboard
C1 D1 E1 F1 G1 A1 B1 C2 D2 E2 F2 G2 A2 B2 C3 D3 E3 F3 G3 A3 B3 C4 D4 E4 F4 G4 A4 B4 C5
Upper Manual Tone (8')
Lower Manual Tone (8')
Pedal Keyboard
Fullbass Pedal
C
C1 D1 E1 F1 G1 A1 B1 C2
Pedal Keyboard

# INTRODUCTORY REMARKS REGARDING SCHEMATIC DIAGRAMS

## 1. Important safety notice:

Components identified by ⚠ mark have special characteristics for safety.
When replacing any of these components, use only manufacturer's specified parts.

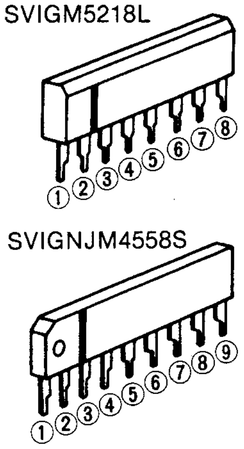
## 2. Measuring of output waveforms

1. The waveform was measured by "National Digital Strage Oscilloscope VP-5730A". Therefore the waveforms of musical tone signals shown may somewhat change due to variation of timing of measure.
2. The voltage shown in the photo is 1/10 of the actual value. However, the actual voltage is 10 times of as shown in this photo.

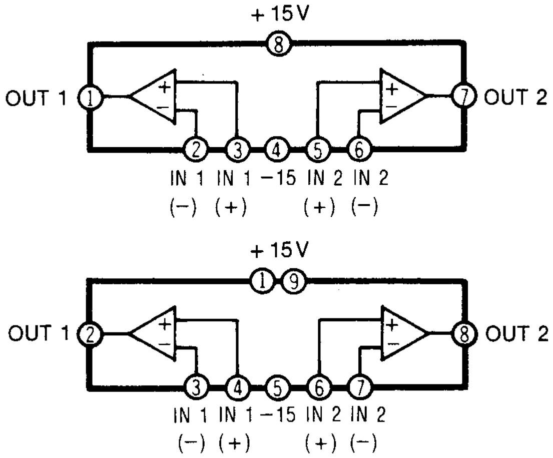
## 3. Terminal No. of operational amplifier

In this model, operational amplifiers with different number of terminals as shown below are used together.
Those mentioned in the circuit diagram are based upon the terminal No. of SVIGM5218L. Therefore, when checking a P.C.B. using SVIGNJM4558S, note that the terminal No. are different from those in the circuit diagram.

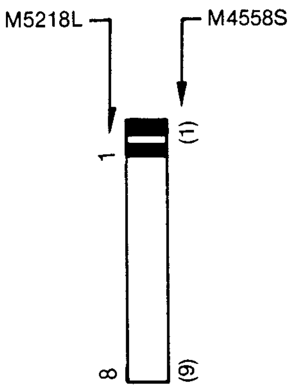
**SHAPE**



**IC BLOCK DIAGRAM**



**PCB SYMBOL MARK**



## 4. Symbolic marks

The symbolic marks for resistors and capacitors, which are used in the circuits for this organ, are as follows.

### ■ Resistors

(1) Resistors without symbolic mark are FIXD CARBON FILM RESISTORS.
(2) All resistors are 1/4 WATT, ±5% TOLERANCE unless otherwise designated in the schematic diagram.
(3) Resistors with Ⓕ symbolic mark are Flame-Proof resistors.
(4) Resistors with 🄵 symbolic mark are fuse type Flame-Proof resistors.
(5) All resistors are in OHMS (Ω) K = 1000Ω, M = 1000kΩ.

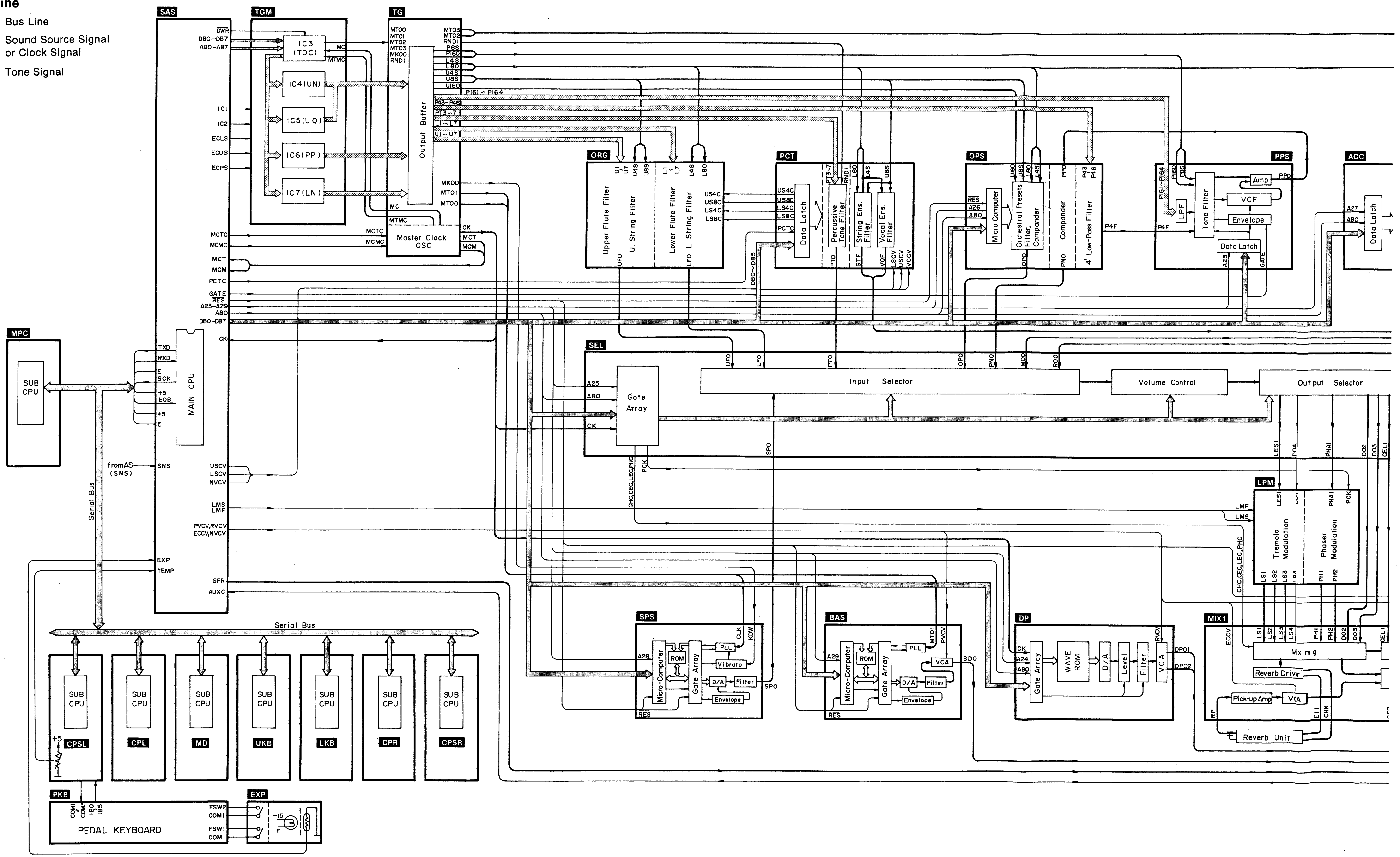
### ■ Capacitors

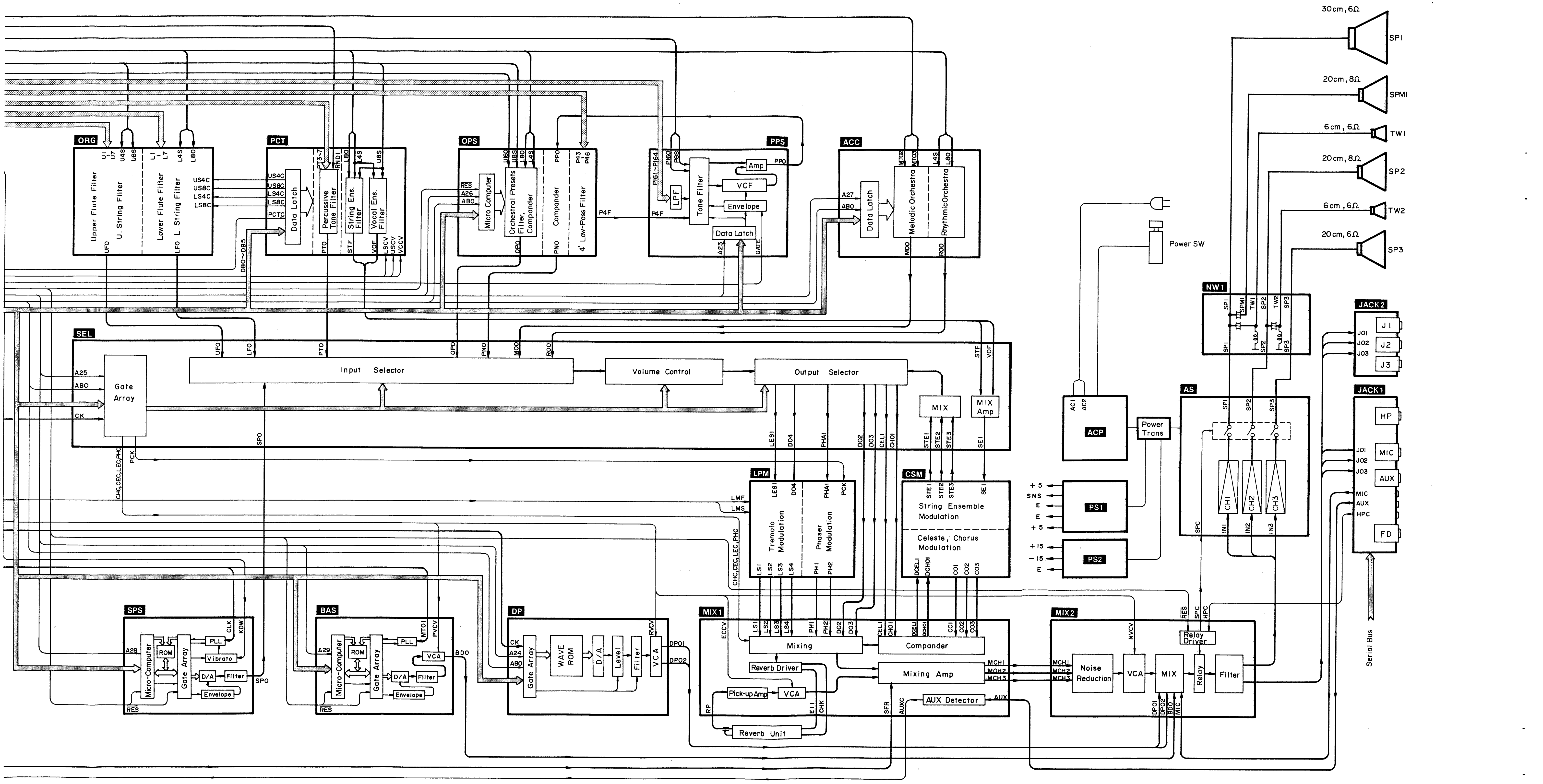
(1) Capacitors without symbolic mark are Polyester Film Capacitors (ECQM—type).
(2) Polarized capacitors without symbolic mark are Aluminum Electrolytic Capacitors. (ECEA—type).
(3) Others
  (TF) : TF capacitor (ECQV—type).
  Ⓩ : Aluminum Electrolytic Capacitor, Ⓩ series Low impedance type (ECEA—Z—type).
  (MS) : Aluminum Electrolytic Capacitor, (MS) series Low leakage current type (ECEA—M—type).
  Ⓚ : Aluminum Electrolytic Capacitor for miniature type (ECEA—K—type).
  Ⓣ : Tantalume Solid Electrolytic Capacitor (ECSF—type).
  Ⓝ, Ⓨ : Bi-Polarized Electrolytic Capacitor (ECEA—N—type), (ECEA—Y—type).
  ○ : Ceramic Capacitor (ECC—type), (ECK—type).
(4) All capacitors are microfarads unless otherwise specified in the schematic diagram.

# TOTAL BLOCK DIAGRAM

**■ Signal Line**

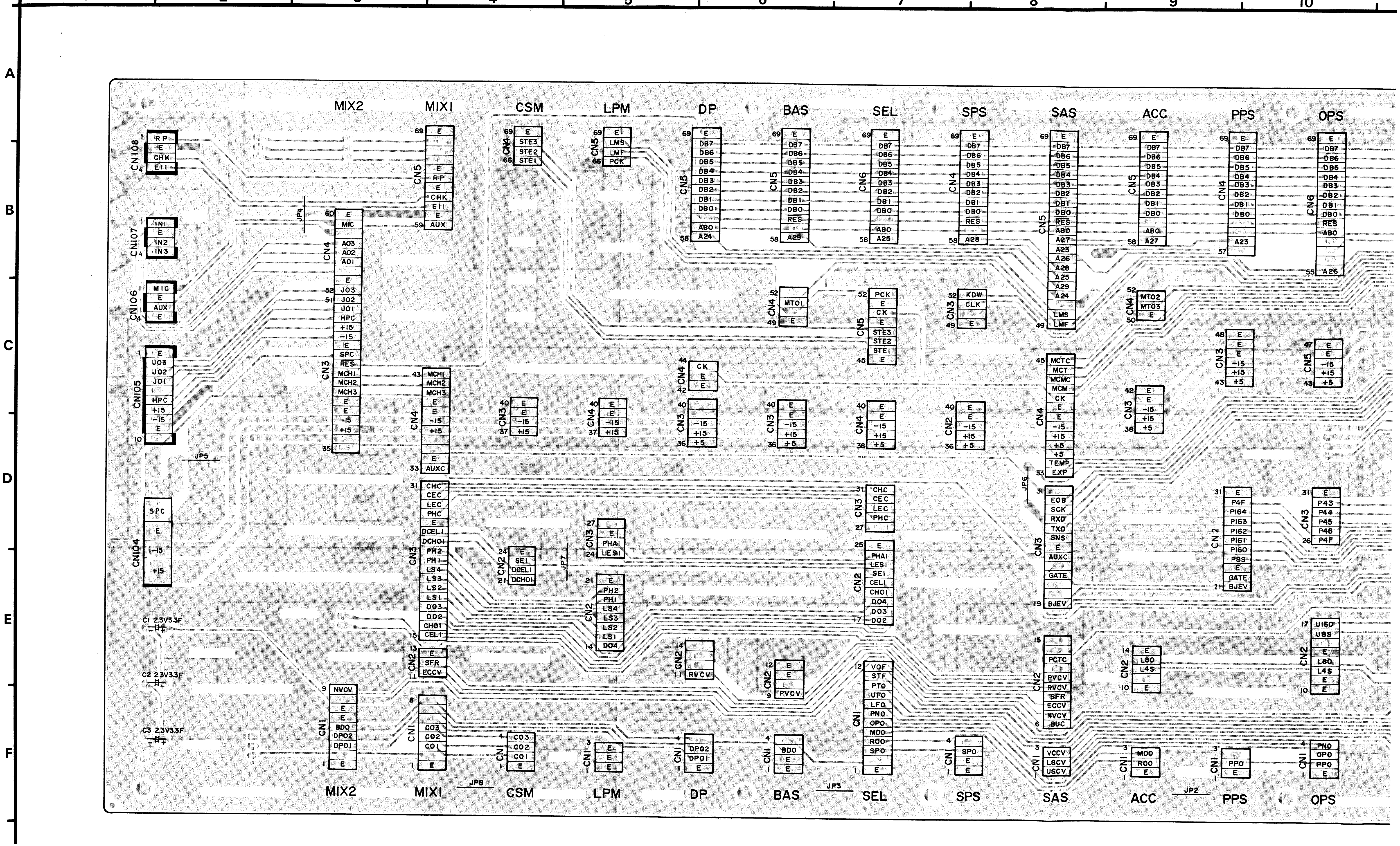
| | |
|---|---|
| ▨ | Bus Line |
| ░ / ▬ | Sound Source Signal or Clock Signal |
| ▬ | Tone Signal |


SAS
TGM
TG
DWR
DB0~DB7
AB0~AB7
IC3 (TOC)
MC
MTMC
IC4(UN)
IC5(UQ)
IC6(PP)
IC7(LN)
IC1
IC2
ECLS
ECUS
ECPS
MT00
MT01
MT02
MT03
MK00
RND1
Output Buffer
MT03
MT02
RND1
P8S
P160
L4S
L80
U4S
U8S
U160
P161~P164
P43~P46
PT3~7
L1~L7
U1~U7
MK00
MT01
MT00
MC
MTMC
MCTC
MCMC
Master Clock OSC
CK
MCT
MCM
MCT
MCM
PCTC
GATE
RES
A23~A29
AB0
DB0~DB7
CK
ORG
Upper Flute Filter
U. String Filter
Lower Flute Filter
L. String Filter
UFO
LFO
US4C
US8C
LS4C
LS8C
PCT
Data Latch
Percussive Tone Filter
String Ens. Filter
Vocal Ens. Filter
PCTC
PTO
STF
VOF
LSCV
USCV
VCCV
DB0~DB5
OPS
RES
A26
AB0
Micro Computer
Orchestral Presets Filter, Compander
Compander
4' Low-Pass Filter
OPO
PNO
PPO
P43 P46
P4F
PPS
LPF
Tone Filter
Amp
VCF
Envelope
Data Latch
A23
GATE
PPO
ACC
A27
AB0
Data Latch
MPC
SUB CPU
TXD
RXD
E
SCK
+5
EOB
+5
E
MAIN CPU
from AS (SNS)
SNS
USCV
LSCV
NVCV
LMS
LMF
PVCV,RVCV
ECCV,NVCV
EXP
TEMP
SFR
AUXC
Serial Bus
SEL
A25
AB0
CK
Gate Array
UFO
LFO
PTO
OPO
PNO
MOO
ROO
Input Selector
Volume Control
Out put Selector
SPO
CHC,CEC,LEC,PHC
PCK
LESI
DO4
PHAI
DO2
DO3
CELI
LPM
LMF
LMS
Tremolo Modulation
Phaser Modulation
LS1
LS2
LS3
LS4
PH1
PH2
PCK
SPS
A26
Micro-Computer
ROM
Gate Array
PLL
Vibrato
D/A
Filter
Envelope
CLK
KOW
SPO
RES
BAS
A29
Micro-Computer
ROM
Gate Array
PLL
VCA
D/A
Filter
Envelope
MT01
PVCV
BDO
RES
DP
CK
A24
AB0
Gate Array
WAVE ROM
D/A
Level
Filter
VCA
RVCV
DPO1
DPO2
MIX1
ECCV
LS1
LS2
LS3
LS4
PH1
PH2
DO2
DO3
CELI
Mixing
Reverb Driver
Pick-up Amp
VCA
RP
EI1
CHK
Reverb Unit
Serial Bus
SUB CPU
+5
CPSL
CPL
MD
UKB
LKB
CPR
CPSR
PKB
COM1
COM3
180
185
PEDAL KEYBOARD
FSW2
COM1
FSW1
COM1
EXP
-15
E



30cm, 6Ω
SP1
20cm, 8Ω
SPM1
6cm, 6Ω
TW1
20cm, 8Ω
SP2
6cm, 6Ω
TW2
20cm, 6Ω
SP3
ORG
Upper Flute Filter
U. String Filter
Lower Flute Filter
L. String Filter
U1
U7
U4S
U8S
L1
L7
L4S
L8O
US4C
US8C
LS4C
LS8C
UFO
LFO
PCT
Data Latch
Percussive Tone Filter
String Ens. Filter
Vocal Ens. Filter
PT3~7
RNDI
L8O
L4S
U8S
PCTC
DB0~DB5
PTO
STF
VOF
LSCV
USCV
VCCV
OPS
Micro Computer
Orchestral Presets Filter, Compander
Compander
4' Low-Pass Filter
RES
A26
AB0
U16O
U8S
L8O
L4S
PPO
P43
P46
P4F
OPO
PNO
PPS
LPF
Tone Filter
Amp
VCF
Envelope
Data Latch
PI61~PI64
P8S
PPO
A23
GATE
ACC
Data Latch
Melodic Orchestra
RhythmicOrchestra
A27
AB0
MTO2
MTO3
L4S
L8O
MOO
ROO
SEL
Gate Array
Input Selector
Volume Control
Output Selector
MIX
MIX Amp
A25
AB0
CK
UFO
LFO
PTO
OPO
PNO
MOO
ROO
STF
VOF
SPO
LES1
DO4
PHA1
DO2
DO3
CEL1
CHO1
STE1
STE2
STE3
SE1
CHC,CEC,LEC,PHC
PCK
LPM
Tremolo Modulation
Phaser Modulation
LMF
LMS
LES1
DO4
PHA1
PCK
LS1
LS2
LS3
LS4
PH1
PH2
CSM
String Ensemble Modulation
Celeste, Chorus Modulation
STE1
STE2
STE3
SE1
DCEL1
DCHO1
CO1
CO2
CO3
SPS
Micro-Computer
ROM
Gate Array
PLL
Vibrato
D/A
Filter
Envelope
A28
CLK
KDW
SPO
RES
BAS
Micro-Computer
ROM
Gate Array
PLL
VCA
D/A
Filter
Envelope
A29
MTO1
PVCV
BDO
RES
DP
Gate Array
WAVE ROM
D/A
Level
Filter
VCA
CK
A24
AB0
RVCV
DPO1
DPO2
MIX1
Mixing
Compander
Reverb Driver
Mixing Amp
Pick-up Amp
VCA
Reverb Unit
AUX Detector
ECCV
LS1
LS2
LS3
LS4
PH1
PH2
DO2
DO3
CEL1
CHO1
DCEL1
DCHO1
CO1
CO2
CO3
MCH1
MCH2
MCH3
RP
EI1
CHK
SFR
AUXC
AUX
MIX2
Noise Reduction
VCA
MIX
Relay
Filter
Relay Driver
MCH1
MCH2
MCH3
NVCV
RES
SPC
HPC
DPO1
DPO2
BDO
MIC
Power SW
ACP
AC1
AC2
Power Trans
PS1
+5
SNS
E
E
+5
PS2
+15
−15
E
NW1
SP1
SPM1
TW1
SP2
TW2
SP3
AS
SP1
SP2
SP3
CH1
CH2
CH3
SPC
IN1
IN2
IN3
JACK2
J1
J2
J3
JO1
JO2
JO3
JACK1
HP
MIC
AUX
FD
JO1
JO2
JO3
MIC
AUX
HPC
Serial Bus

# MOTHER CIRCUIT BOARD (MB)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C
D
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LPM
DP
BAS
SEL
SPS
SAS
ACC
PPS
OPS
CN108
RP
E
CHK
E11
CN107
IN1
IN2
IN3
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MIC
AUX
CN105
J03
J02
J01
HPC
+15
−15
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SPC
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CN4
CN5
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DB7
DB6
DB5
DB4
DB3
DB2
DB1
DB0
AB0
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RES
STE1
STE2
STE3
LMS
LMF
PCK
MT01
MT02
MT03
KDW
CLK
CK
A03
A02
A01
MCH1
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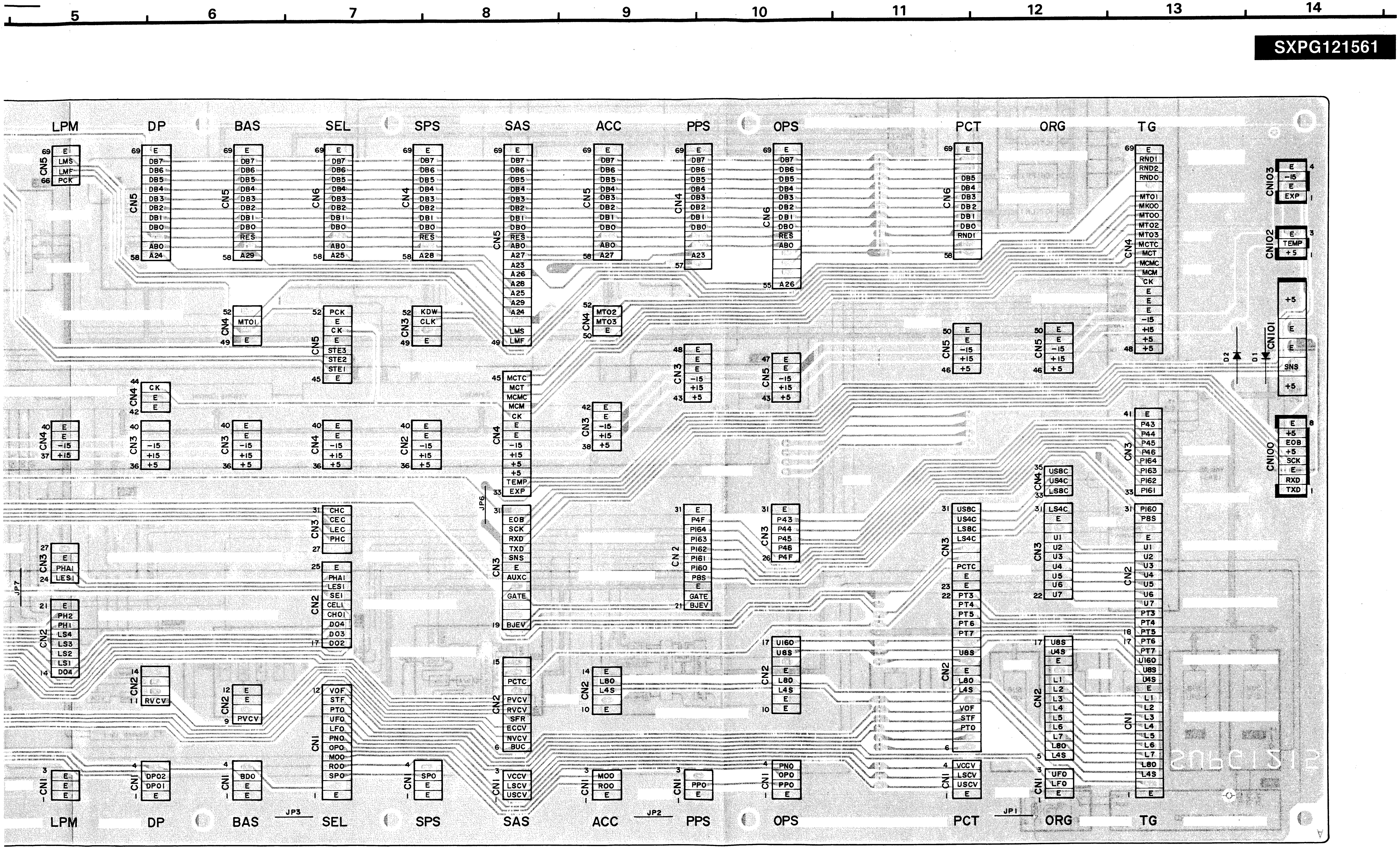
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OPS
PCT
ORG
TG
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CN6 69 E DB5 DB4 DB3 DB2 DB1 DB0 RND1 58
CN4 69 E RND1 RND2 RND0 MT01 MK00 MT00 MT02 MT03 MCTC MCT MCMC MCM CK E E E -15 +15 +5 +5 48
CN103 4 E -15 E EXP 1
CN102 3 E TEMP +5 1
CN101 +5 E E SNS +5
D2
D1
CN4 52 MT01 E 49
CN5 52 PCK E CK E STE3 STE2 STE1 E 45
CN3 52 KDW CLK E 49
CN4 52 MT02 MT03 E 50
CN3 48 E E E -15 +15 +5 43
CN5 47 E E -15 +15 +5 43
CN5 50 E E -15 +15 +5 46
CN5 50 E E -15 +15 +5 46
CN4 44 CK E E 42
CN4 45 MCTC MCT MCMC MCM CK E E -15 +15 +5 +5 TEMP EXP 33
CN3 42 E E -15 +15 +5 38
CN3 41 E P43 P44 P45 P46 P164 P163 P162 P161 33
CN100 8 E +5 EOB +5 SCK E RXD TXD 1
CN4 40 E E -15 +15 37
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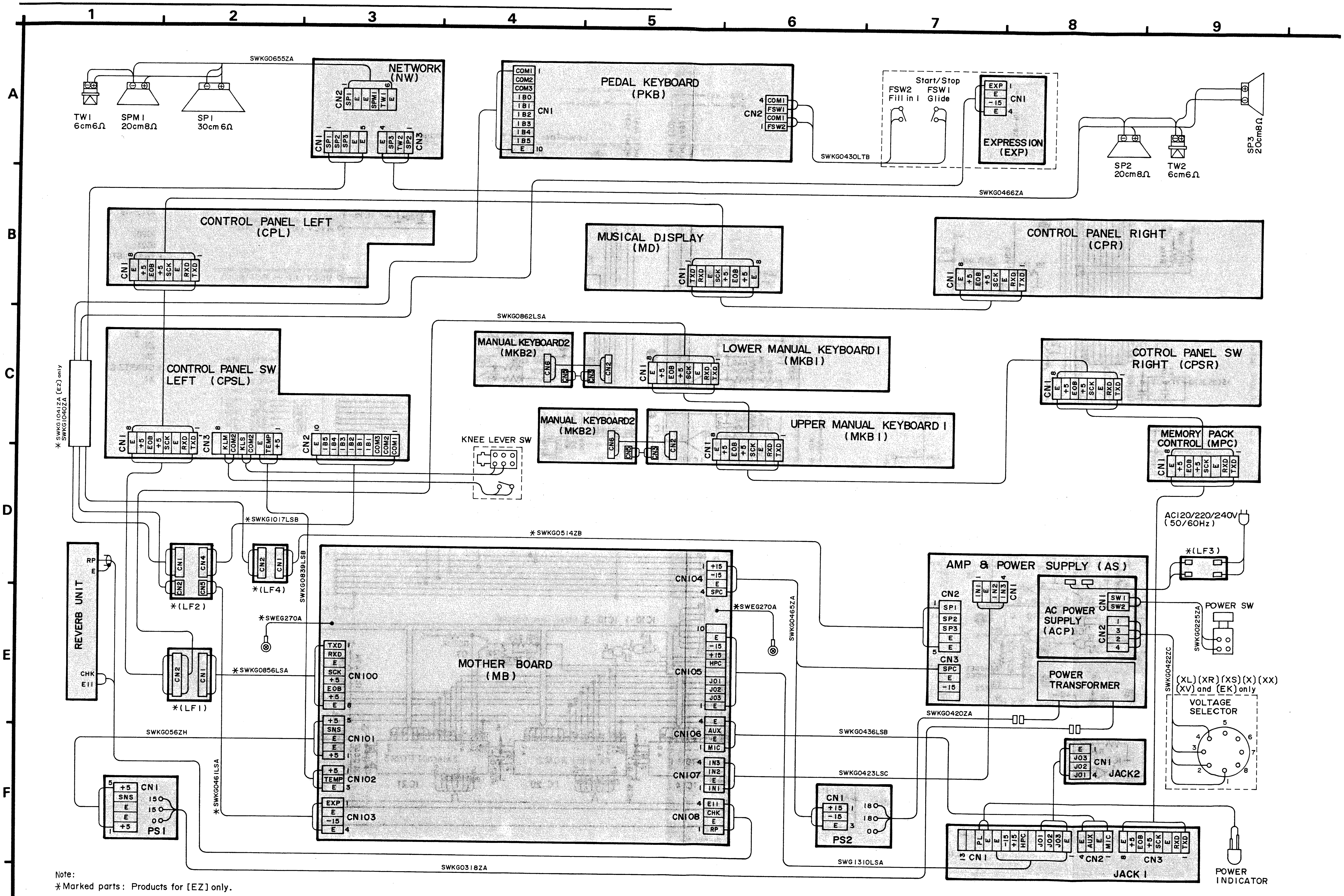
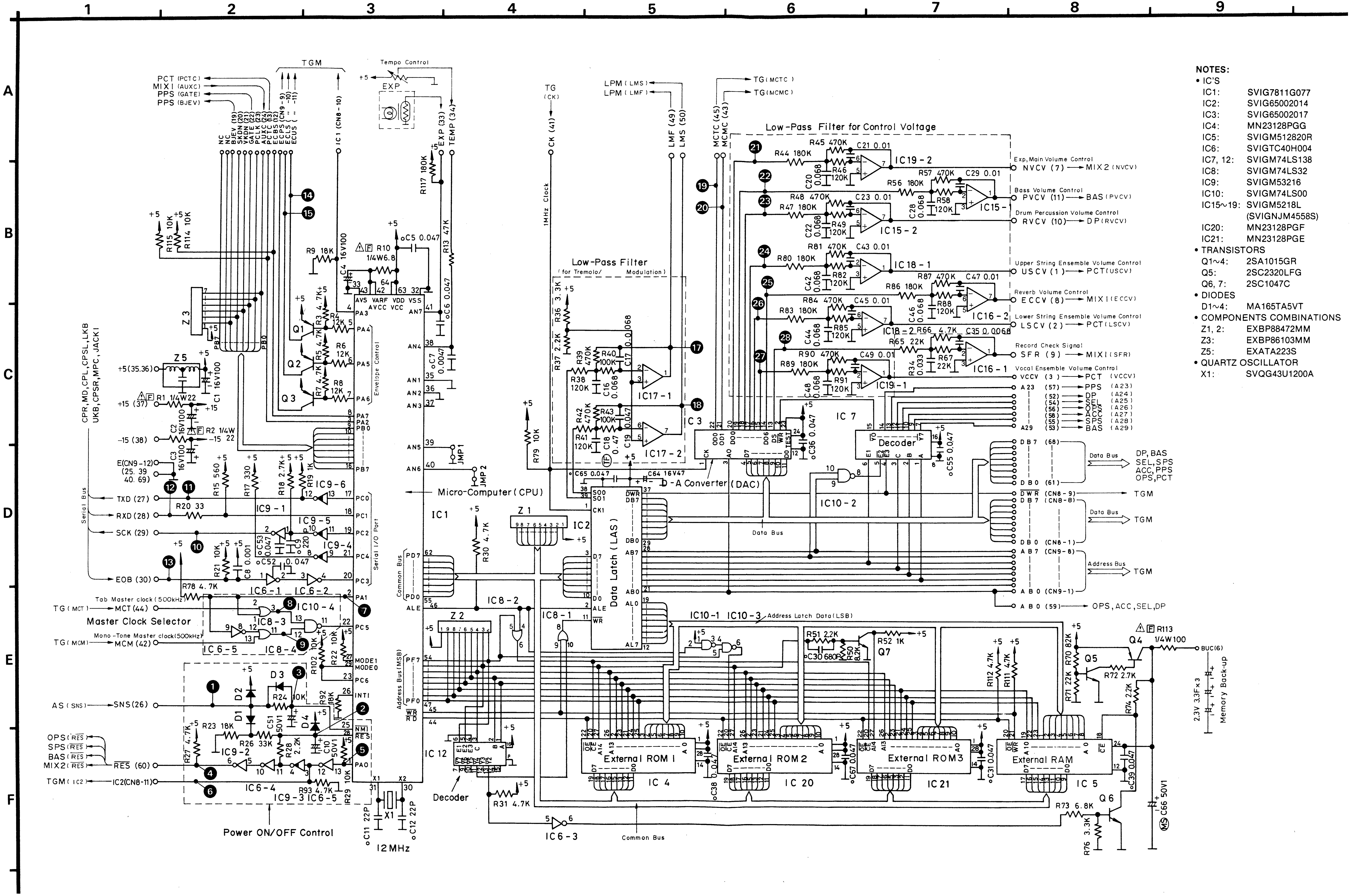
CN4 40 E E -15 +15 +5 36
CN2 40 E E -15 +15 +5 36
CN4 35 US8C US4C LS8C 33
JP6
CN3 31 CHC CEC LEC PHC 27
CN3 31 EOB SCK RXD TXD SNS E AUXC GATE BJEV 19
CN2 31 E P4F P164 P163 P162 P161 P160 P8S E GATE BJEV 21
CN3 31 E P43 P44 P45 P46 P4F 26
CN3 31 US8C US4C LS8C LS4C PCTC E E 23
CN3 31 LS4C E U1 U2 U3 U4 U5 U6 U7 22
CN2 31 P160 P8S E U1 U2 U3 U4 U5 U6 U7 PT3 PT4 PT5 18 PT6 17 PT7 U160 U8S U4S E L1 L2 L3 L4 L5 L6 L7 L80 L4S E 1
CN1
CN3 27 E PHA1 LES1 24
JP7
CN2 25 E PHA1 LES1 SE1 CEL1 CH01 D04 D03 D02 17
CN2 21 E PH2 PH1 LS4 LS3 LS2 LS1 D04 14
CN2 22 PT3 PT4 PT5 PT6 PT7 U8S E L80 L4S V0F STF PT0 6
CN2 17 U160 U8S E L80 L4S E E 10
CN2 17 U8S U4S E L1 L2 L3 L4 L5 L6 L7 L80 L4S 5
CN2 14 RVCV 11
CN2 12 E E PVCV 9
CN1 12 V0F STF PT0 UF0 LF0 PN0 OP0 M00 R00 SP0 E 1
CN2 15 PCTC PVCV RVCV SFR ECCV NVCV BUC 6
CN2 14 E L80 L4S E 10
CN1 3 E E E 1
CN1 4 DP02 DP01 E 1
CN1 4 BD0 E E 1
CN1 4 SP0 E E 1
CN1 3 VCCV LSCV USCV 1
CN1 3 M00 R00 E 1
CN1 3 PP0 E 1
CN1 4 PN0 OP0 PP0 E 1
CN1 4 VCCV LSCV USCV E 1
CN1 3 UF0 LF0 E 1
LPM
DP
BAS
JP3
SEL
SPS
SAS
ACC
JP2
PPS
OPS
PCT
JP1
ORG
TG

# WIRING CONNECTION DIAGRAM


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
SWKG0655ZA
TW1 6cm6Ω
SPM1 20cm8Ω
SP1 30cm6Ω
NETWORK (NW)
CN2
SP1
E
E
SPM1
TW1
CN1
SP1
SP2
SP3
E
E
CN3
E
SP3
TW2
SP2
PEDAL KEYBOARD (PKB)
COM1
COM2
COM3
1B0
1B1
1B2
1B3
1B4
1B5
E
CN1
CN2
COM1
FSW1
COM1
FSW2
SWKG0430LTB
Start/Stop
FSW2 Fill in 1
FSW1 Glide
EXP
E
-15
E
CN1
EXPRESSION (EXP)
SP2 20cm8Ω
TW2 6cm6Ω
SP3 20cm8Ω
SWKG0466ZA
CONTROL PANEL LEFT (CPL)
CN1
E
+5
E0B
+5
SCK
E
RXD
TXD
MUSICAL DISPLAY (MD)
CONTROL PANEL RIGHT (CPR)
SWKG0862LSA
MANUAL KEYBOARD2 (MKB2)
CN6
CN5
CN3
CN2
LOWER MANUAL KEYBOARD1 (MKB1)
COTROL PANEL SW RIGHT (CPSR)
*SWKG1041ZA (EZ) only
SWKG1040ZA
CONTROL PANEL SW LEFT (CPSL)
CN3
KLM
COM2
KLS
COM2
TEMP
+5
CN2
E
1B5
1B4
1B3
1B2
1B1
1B0
COM3
COM2
COM1
KNEE LEVER SW
UPPER MANUAL KEYBOARD1 (MKB1)
MEMORY PACK CONTROL (MPC)
AC120/220/240V (50/60Hz)
*SWKG1017LSB
*SWKG0514ZB
*(LF3)
REVERB UNIT
RP
E
CHK
E11
CN1
CN4
CN2
CN5
*(LF2)
*(LF4)
SWKG0839LSB
*SWEG270A
MOTHER BOARD (MB)
CN104
+15
-15
E
SPC
CN105
E
-15
+15
HPC
J01
J02
J03
SWKG0465ZA
AMP & POWER SUPPLY (AS)
IN1
E
IN2
IN3
SP1
SP2
SP3
SPC
AC POWER SUPPLY (ACP)
SW1
SW2
POWER SW
SWKG0225ZA
POWER TRANSFORMER
SWKG0422ZC
(XL) (XR) (XS) (X) (XX) (XV) and (EK) only
VOLTAGE SELECTOR
*SWKG0856LSA
*(LF1)
CN100
TXD
RXD
E
SCK
+5
E0B
CN101
SNS
CN102
TEMP
CN103
EXP
CN106
AUX
MIC
CN107
IN3
IN2
IN1
CN108
E11
CHK
RP
SWKG0420ZA
SWKG0436LSB
SWKG0423LSC
SWKG056ZH
*SWKG0461LSA
PS1
18Ω
15Ω
0Ω
PS2
JACK2
J03
J02
J01
JACK1
PL
HPC
SWG1310LSA
SWKG0318ZA
POWER INDICATOR

Note:
*Marked parts: Products for [EZ] only.

# SYSTEM ASSIGNER CIRCUIT DIAGRAM (SAS)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
TGM
Tempo Control
EXP
PCT (PCTC)
MIX I (AUXC)
PPS (GATE)
PPS (BJEV)
NC
NC
BJEV (19)
SKDN (20)
VKDN (21)
GATE (22)
PCLK (23)
AUXC (24)
PCTC (13)
PCBS (12)
ECPS (CN9-9)
ECLS (-10)
ECUS (-11)
IC1 (CN8-10)
EXP (33)
TEMP (34)
R117 180K
R13 47K
R115 10K
R114 10K
R9 18K
R10 1/4W6.8
C4 16V100
C5 0.047
C6 0.047
C7 0.0047
Z3
Z5
Q1
Q2
Q3
Envelope Control
CPR, MD, CPL, CPSL, LKB
UKB, CPSR, MPC, JACK1
+5(35.36)
C1 16V100
+15 (37)
R1 1/4W22
R2 1/4W 22
C2 16V100
-15 (38)
C3 16V100
E(CN9-12)
(25. 39 40. 69)
Serial Bus
TXD (27)
RXD (28)
SCK (29)
EOB (30)
R20 33
R15 560
R17 330
R18 2.7K
R19 1K
IC9-1
IC9-4
IC9-5
IC9-6
C53 0.047
C9 220
C52 0.047
R21 10K
C8 0.001
R78 4.7K
IC6-1
IC6-2
Serial I/O Port
Tab Master clock (500kHz)
TG (MCT) → MCT (44)
Master Clock Selector
Mono-Tone Master clock (500kHz)
TG (MCM) → MCM (42)
IC8-3
IC10-4
IC6-5
IC8-4
R102 10K
R22 10K
AS (SNS) → SNS (26)
D1
D2
D3
D4
R23 18K
R24 10K
R26 33K
R28 2.2K
R92 18K
C51 50V1
C10 50V1
R27 4.7K
OPS (RES)
SPS (RES)
BAS (RES)
MIX2 (RES) → RES (60)
TGM (IC2) → IC2 (CN8-11)
IC9-2
IC6-4
IC9-3
R93 4.7K
R29 10K
Power ON/OFF Control
C11 22P
C12 22P
X1
12MHz
Micro-Computer (CPU)
IC1
Common Bus
Address Bus (MSB)
R30 4.7K
Z1
IC2
IC8-2
IC8-1
Z2
IC12
Decoder
R31 4.7K
IC6-3
Common Bus
TG (CK)
CK (41)
1MHz Clock
R79 10K
JMP1
JMP2
LPM (LMS)
LPM (LMF)
LMF (49)
LMS (50)
Low-Pass Filter (for Tremolo/Modulation)
R36 3.3K
R37 2.2K
R39 470K
R40 100K
C17 0.068
R38 120K
C16 0.068
IC17-1
R42 470K
R43 100K
C19 0.047
R41 120K
C18 0.47
IC17-2
C65 0.047
C64 16V47
D-A Converter (DAC)
IC3
Data Latch (LAS)
Data Bus
IC10-1
IC10-3
Address Latch Data (LSB)
R51 2.2K
C30 680P
R50 8.2K
Q7
R52 1K
External ROM 1
IC4
C38 0.047
External ROM 2
IC20
C67 0.047
External ROM 3
IC21
C31 0.047
External RAM
IC5
C39 0.047
R112 4.7K
R111 4.7K
R70 82K
R71 22K
Q5
R72 2.7K
Q4
R113 1/4W100
BUC (6)
R74 2.2K
2.3V 3.3F×3
Memory Back-up
C66 50V1
R73 6.8K
Q6
R76 3.3K
TG (MCTC)
TG (MCMC)
MCTC (45)
MCMC (43)
Low-Pass Filter for Control Voltage
R44 180K
R45 470K
C21 0.01
R46 120K
C20 0.068
IC19-2
R56 180K
R57 470K
C29 0.01
R58 120K
C28 0.068
IC15-1
R47 180K
R48 470K
C23 0.01
R49 120K
C22 0.068
IC15-2
R80 180K
R81 470K
C43 0.01
R82 120K
C42 0.068
IC18-1
R86 180K
R87 470K
C47 0.01
R88 120K
C46 0.068
IC16-2
R83 180K
R84 470K
C45 0.01
R85 120K
C44 0.068
IC18-2
R66 4.7K
C35 0.068
R65 22K
R67 22K
C34 0.033
IC16-1
R89 180K
R90 470K
C49 0.01
R91 120K
C48 0.068
IC19-1
Exp, Main Volume Control
NVCV (7) → MIX2 (NVCV)
Bass Volume Control
PVCV (11) → BAS (PVCV)
Drum Percussion Volume Control
RVCV (10) → DP (RVCV)
Upper String Ensemble Volume Control
USCV (1) → PCT (USCV)
Reverb Volume Control
ECCV (8) → MIX I (ECCV)
Lower String Ensemble Volume Control
LSCV (2) → PCT (LSCV)
Record Check Signal
SFR (9) → MIX I (SFR)
Vocal Ensemble Volume Control
VCCV (3) → PCT (VCCV)
A23 (57) → PPS (A23)
(52) → DP (A24)
(54) → SEL (A25)
(56) → OPS (A26)
(58) → ACC (A27)
(55) → SPS (A28)
A29 (53) → BAS (A29)
IC7
Decoder
C36 0.047
C55 0.047
IC10-2
DB7 (68)
DB0 (61)
Data Bus
DP, BAS
SEL, SPS
ACC, PPS
OPS, PCT
DWR (CN8-9) → TGM
DB7 (CN8-8)
DB0 (CN8-1)
Data Bus → TGM
AB7 (CN9-8)
AB0 (CN9-1)
Address Bus → TGM
AB0 (59) → OPS, ACC, SEL, DP

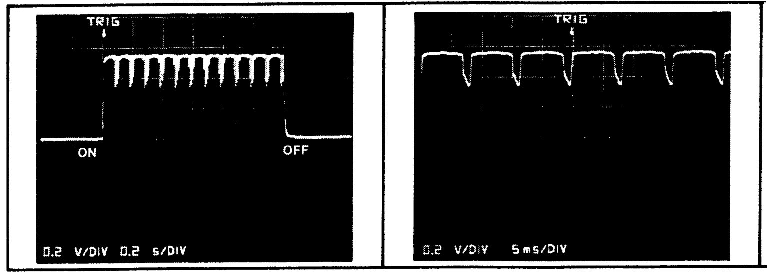
NOTES:
- IC'S
  - IC1: SVIG7811G077
  - IC2: SVIG65002014
  - IC3: SVIG65002017
  - IC4: MN23128PGG
  - IC5: SVIGM512820R
  - IC6: SVIGTC40H004
  - IC7, 12: SVIGM74LS138
  - IC8: SVIGM74LS32
  - IC9: SVIGM53216
  - IC10: SVIGM74LS00
  - IC15~19: SVIGM5218L (SVIGNJM4558S)
  - IC20: MN23128PGF
  - IC21: MN23128PGE
- TRANSISTORS
  - Q1~4: 2SA1015GR
  - Q5: 2SC2320LFG
  - Q6, 7: 2SC1047C
- DIODES
  - D1~4: MA165TA5VT
- COMPONENTS COMBINATIONS
  - Z1, 2: EXBP88472MM
  - Z3: EXBP86103MM
  - Z5: EXATA223S
- QUARTZ OSCILLATOR
  - X1: SVQG43U1200A

# SYSTEM ASSIGNER CIRCUIT BOARD (SAS)

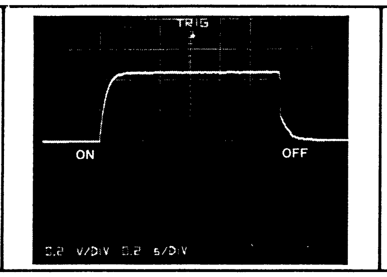
1 2 3 4 5 6 7 8 9

A B C D E F

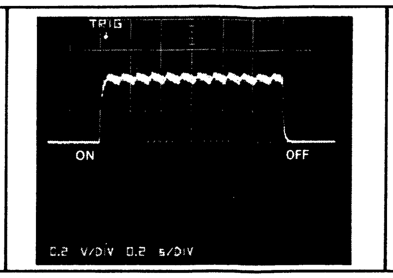
❶ SNS POWER ON→OFF



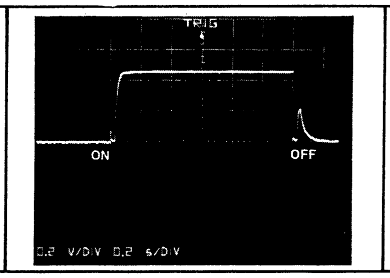
❷ $\overline{\text{RES}}$



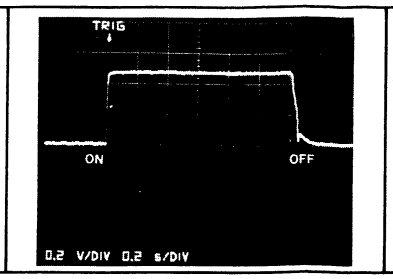
❸ $\overline{\text{NMI}}$



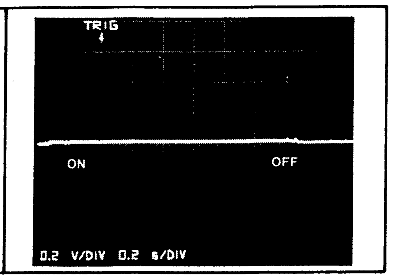
❹ $\overline{\text{RES}}$



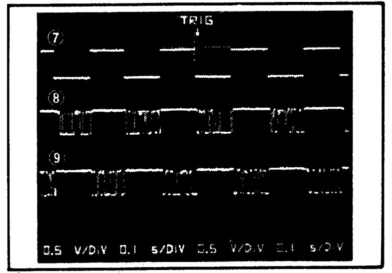
❺ PAO



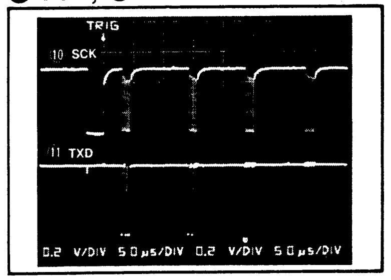
❻ IC2



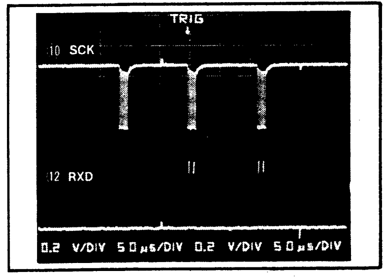
❼, ❽, ❾



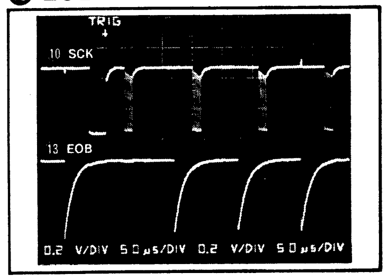
❿ SCK, ⓫ TXD

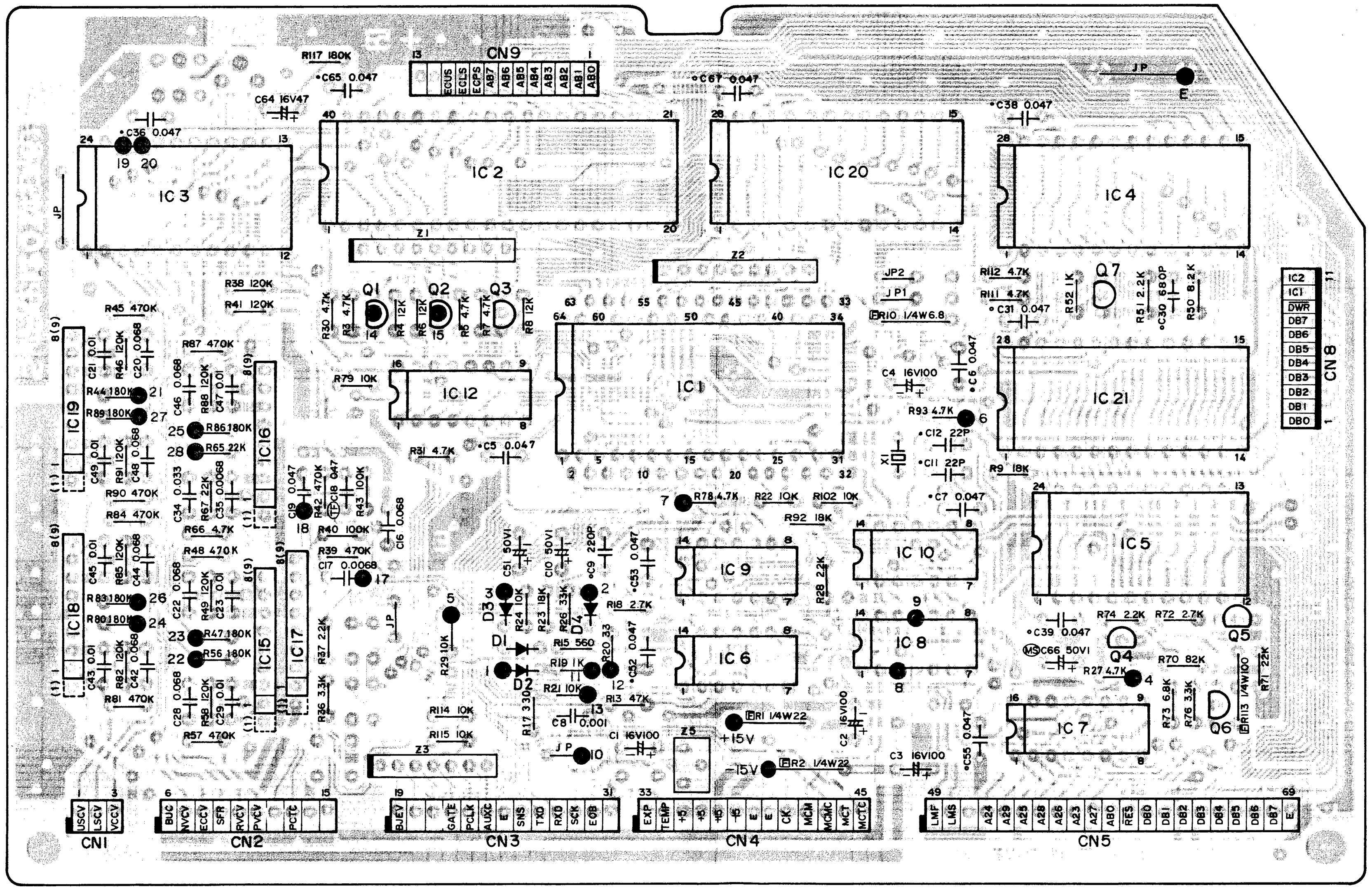


⓬ RXD



⓭ EOB



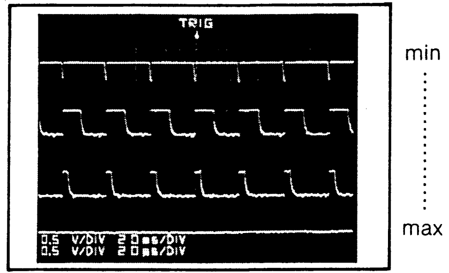


CN9
IC3
IC2
IC20
IC4
IC1
IC21
IC12
IC19
IC16
IC18
IC15
IC17
IC9
IC10
IC5
IC6
IC8
IC7
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Z1
Z2
Z3
Z5
D1
D2
D3
D4
X1
JP
JP1
JP2
CN8
CN1
CN2
CN3
CN4
CN5
+15V
-15V

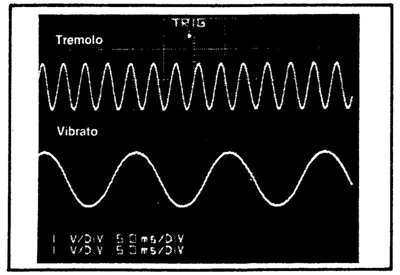
Circuit view on top of P.C.B.

**SXPG12073**

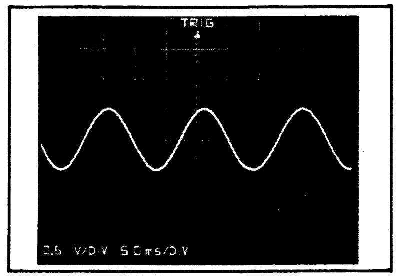
⓮, ⓯ U&L Sustain Control



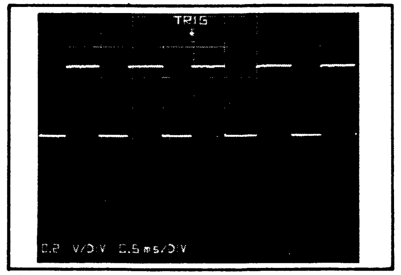
⓱ Tremolo: fast, vibrato



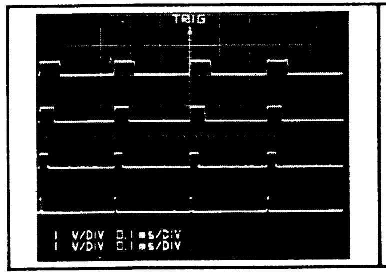
⓲ Tremolo: fast



⓳, ⓴ Master clock

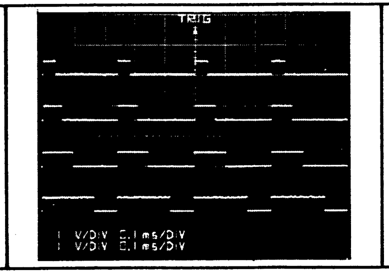


㉑ Main Vol, EXP Control



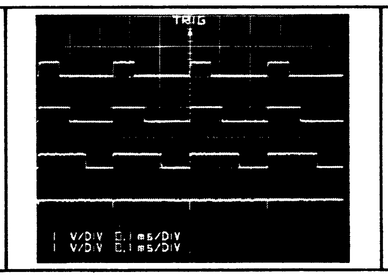
- EXP Pedal............................max
- Main Volume........................min ~ max

㉒ Bass Volume Control



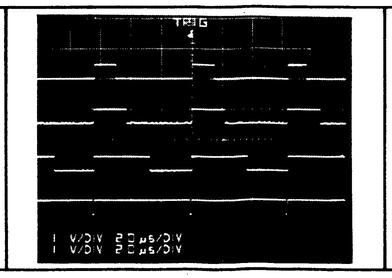
- Main Vol., EXP...................max
- Bass Volume.......................min ~ max

㉓ Drum Percussion Vol. Control



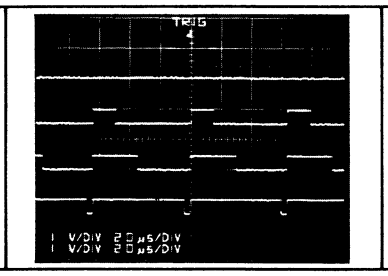
- Drum Percussion................on
- Main Vol., EXP....................max
- Volume.................................min ~ max

㉔, ㉖ U&L String Ensemble Volume Control



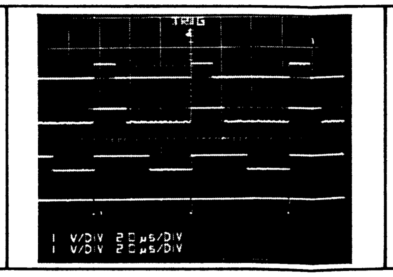
- String Ensemble
- Volume.................................min ~ max

㉕ Reverb Volume Control



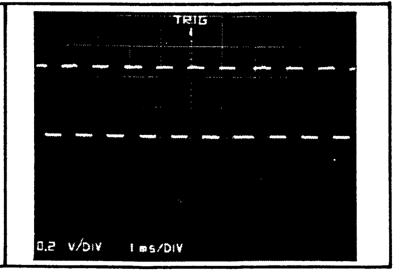
- Reverb
- Volume.................................min ~ max

㉗ U&L Vocal Ensemble Volume Control



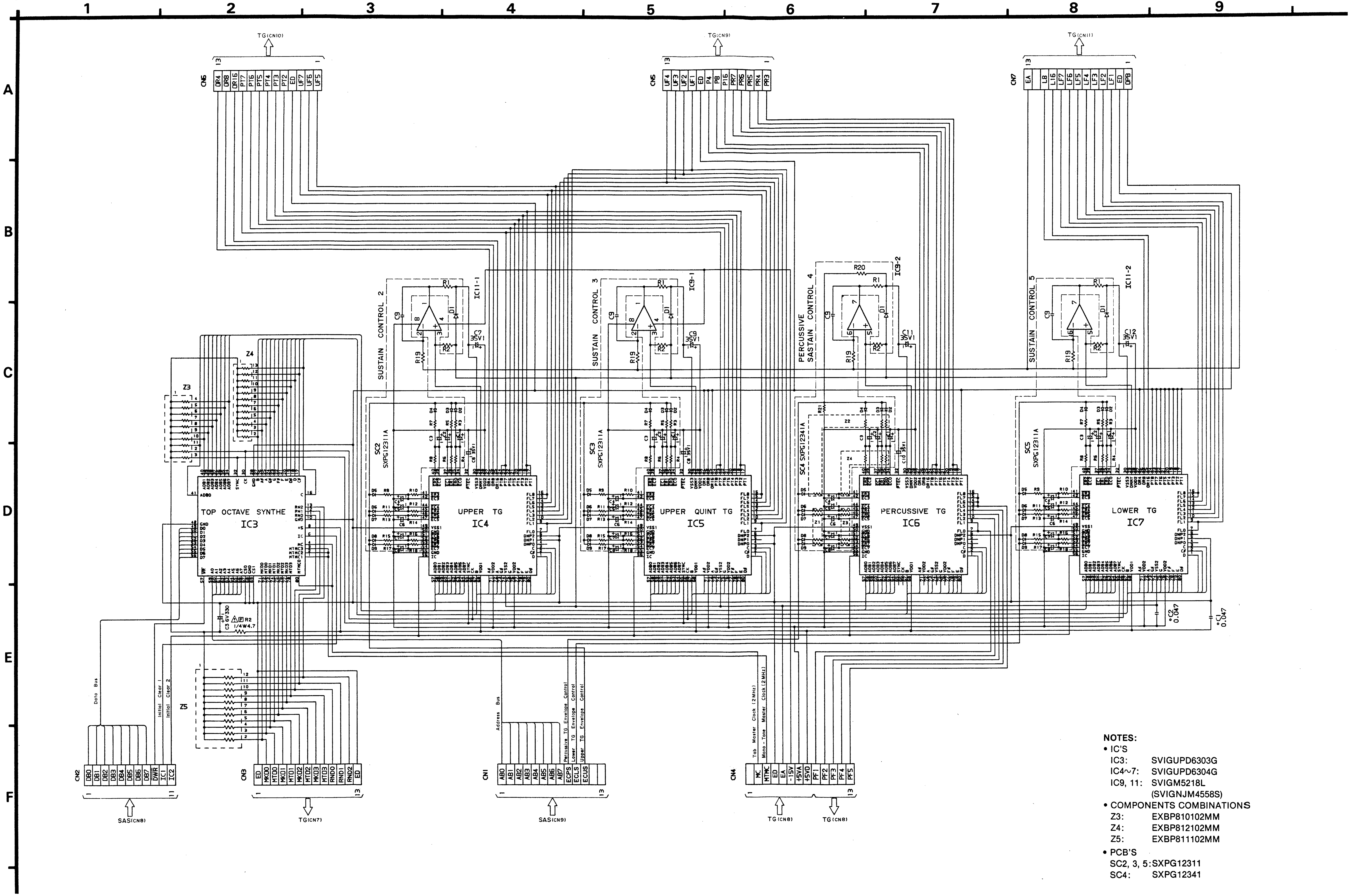
- Vocal Ensemble
- Volume.................................min ~ max

㉘ Record Check Signal



- Record SW..........................ON
- PCC SW...............................ON
- Lower Key...........................C5

# TONE GENERATOR MODULE CIRCUIT DIAGRAM (TGM)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
TG(CN10)
CN6
DR4
DR8
DR16
PT7
PT6
PT5
PT4
PT3
PT2
ED
UF7
UF6
UF5
TG(CN9)
CN5
UF4
UF3
UF2
UF1
ED
P4
P8
P16
PR7
PR6
PR5
PR4
PR3
TG(CN11)
CN7
EA
L8
L16
LF7
LF6
LF5
LF4
LF3
LF2
LF1
ED
DP8
SUSTAIN CONTROL 2
SUSTAIN CONTROL 3
PERCUSSIVE SASTAIN CONTROL 4
SUSTAIN CONTROL 5
IC11-1
IC9-1
IC9-2
IC11-2
R20
R1
R2
R19
C9
C7
D1
35V1
SC2 SXPG12311A
SC3 SXPG12311A
SC4 SXPG12341A
SC5 SXPG12311A
Z3
Z4
Z5
TOP OCTAVE SYNTHE
IC3
UPPER TG
IC4
UPPER QUINT TG
IC5
PERCUSSIVE TG
IC6
LOWER TG
IC7
C3 6V330
R2 1/4W4.7
C2 0.047
C1 0.047
Data Bus
Initial Clear 1
Initial Clear 2
Address Bus
Percussive TG Envelope Control
Lower TG Envelope Control
Upper TG Envelope Control
Tab Master Clock (2MHz)
Mono-Tone Master Clock (2MHz)
CN2
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
DWR
IC1
IC2
SAS(CN8)
CN3
ED
MK00
MT00
MK01
MT01
MK02
MT02
MK03
MT03
RND0
RND1
RND2
ED
TG(CN7)
CN1
AB0
AB1
AB2
AB3
AB4
AB5
AB6
AB7
ECPS
ECLS
ECUS
SAS(CN9)
CN4
MC
MTMC
ED
EA
-15V
+5VA
+5VD
PF1
PF2
PF3
PF4
PF5
TG(CN8)
TG(CN8)

**NOTES:**

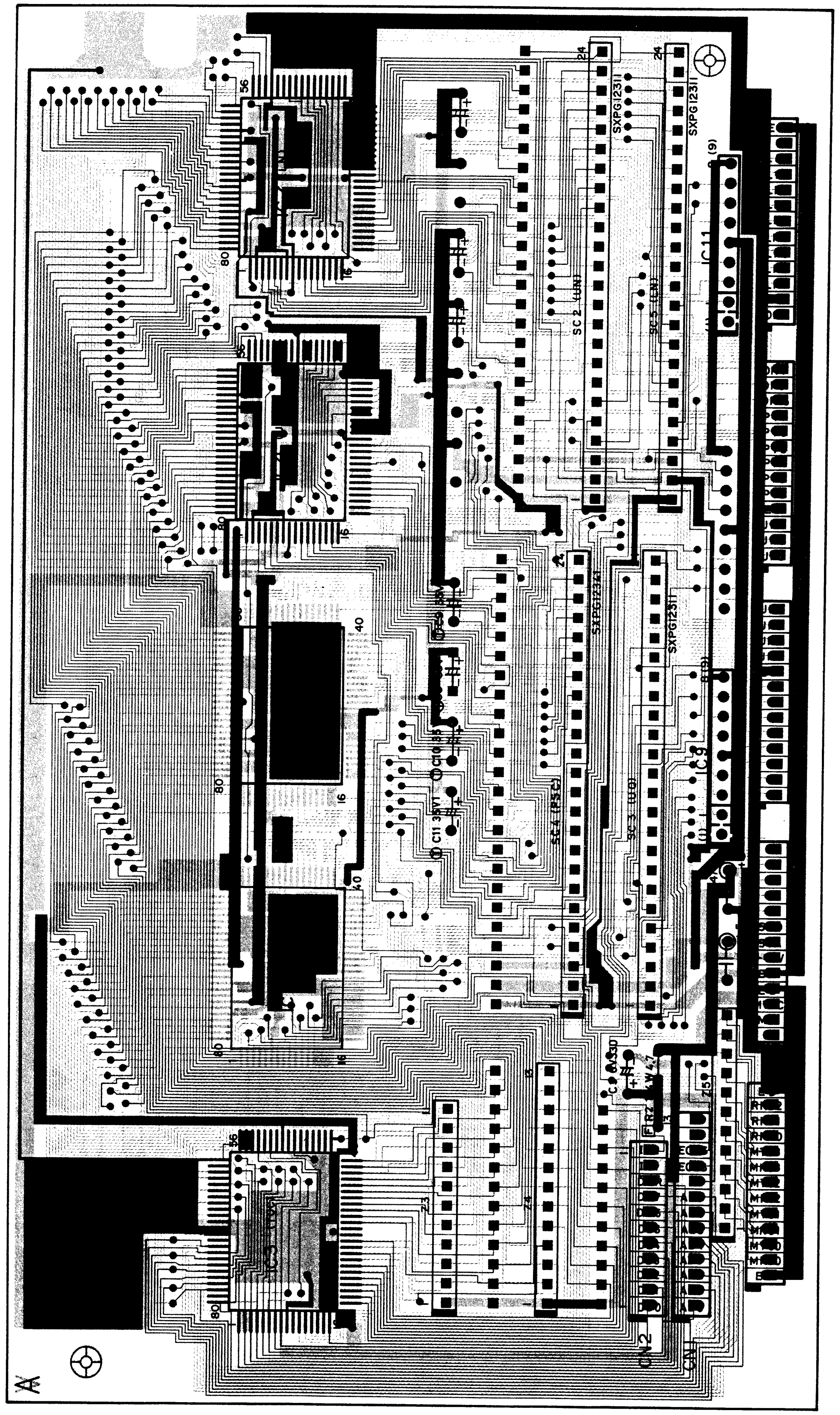
- IC'S
  - IC3: SVIGUPD6303G
  - IC4~7: SVIGUPD6304G
  - IC9, 11: SVIGM5218L (SVIGNJM4558S)
- COMPONENTS COMBINATIONS
  - Z3: EXBP810102MM
  - Z4: EXBP812102MM
  - Z5: EXBP811102MM
- PCB'S
  - SC2, 3, 5: SXPG12311
  - SC4: SXPG12341

# TONE GENERATOR MODULE CIRCUIT BOARD (TGM)

1 2 3 4 5

Circuit view on top of P.C.B.

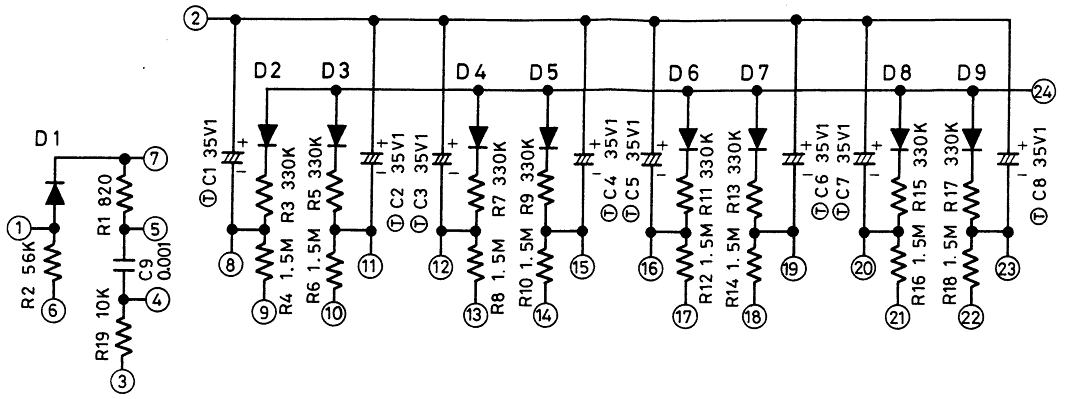
**SXPG12063**



SXPG12311
SXPG12341
SC 2 (UN)
SC 5 (CN)
SC 4 (PSC)
SC 3 (UO)
IC 11
C11 35V1
C10 35V
C9
CN2
CN1
Z3
Z4
80
40
16
56

# SUSTAIN CONTROL CIRCUIT (SC)

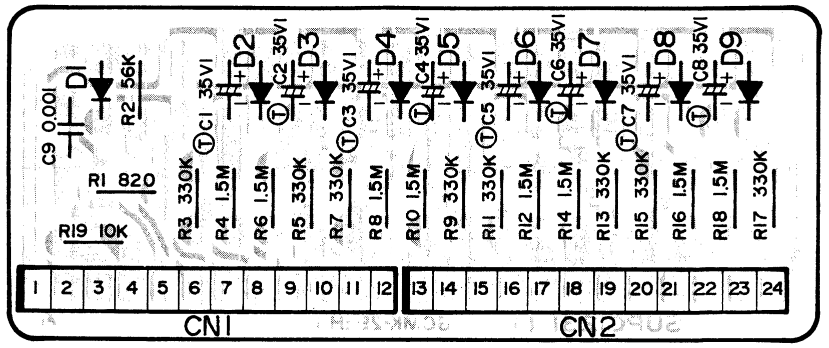
1 2 3 4



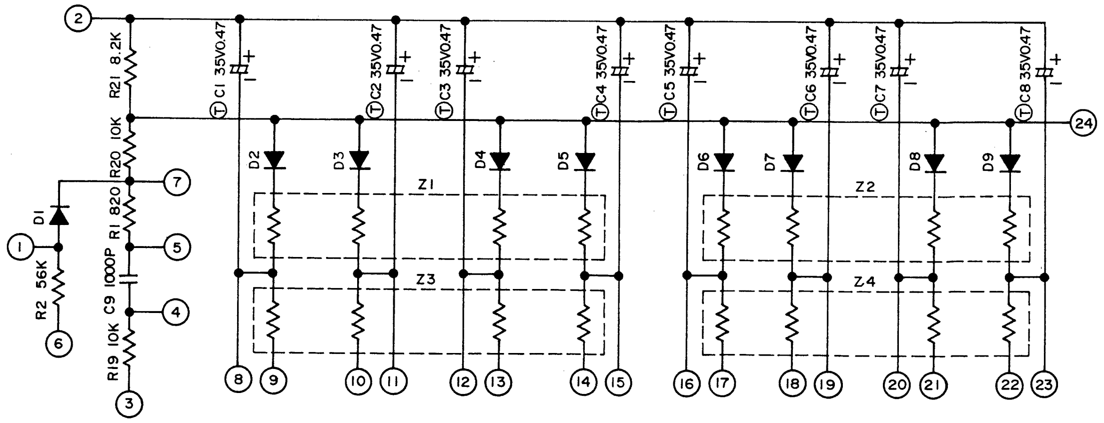
D1
D2
D3
D4
D5
D6
D7
D8
D9
R1 820
R2 56K
R19 10K
C9 0.001
C1 35V1
C2 35V1
C3 35V1
C4 35V1
C5 35V1
C6 35V1
C7 35V1
C8 35V1
R3 330K
R4 1.5M
R5 330K
R6 1.5M
R7 330K
R8 1.5M
R9 330K
R10 1.5M
R11 330K
R12 1.5M
R13 330K
R14 1.5M
R15 330K
R16 1.5M
R17 330K
R18 1.5M

**SXPG12311**

NOTES:
- DIODES
  D1~9: MA165TA5VT



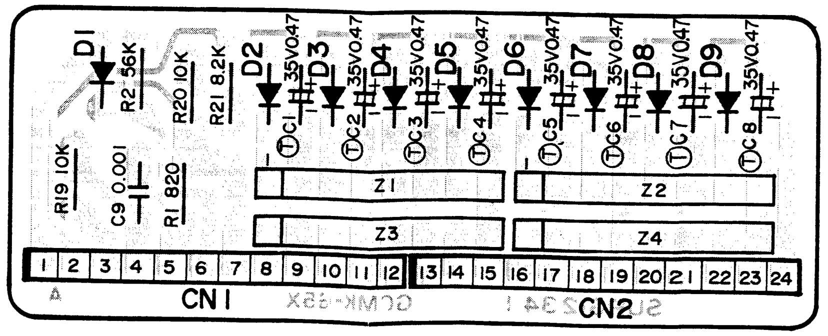
# PERCUSSIVE TG SUSTAIN CONTROL CIRCUIT (PSC)



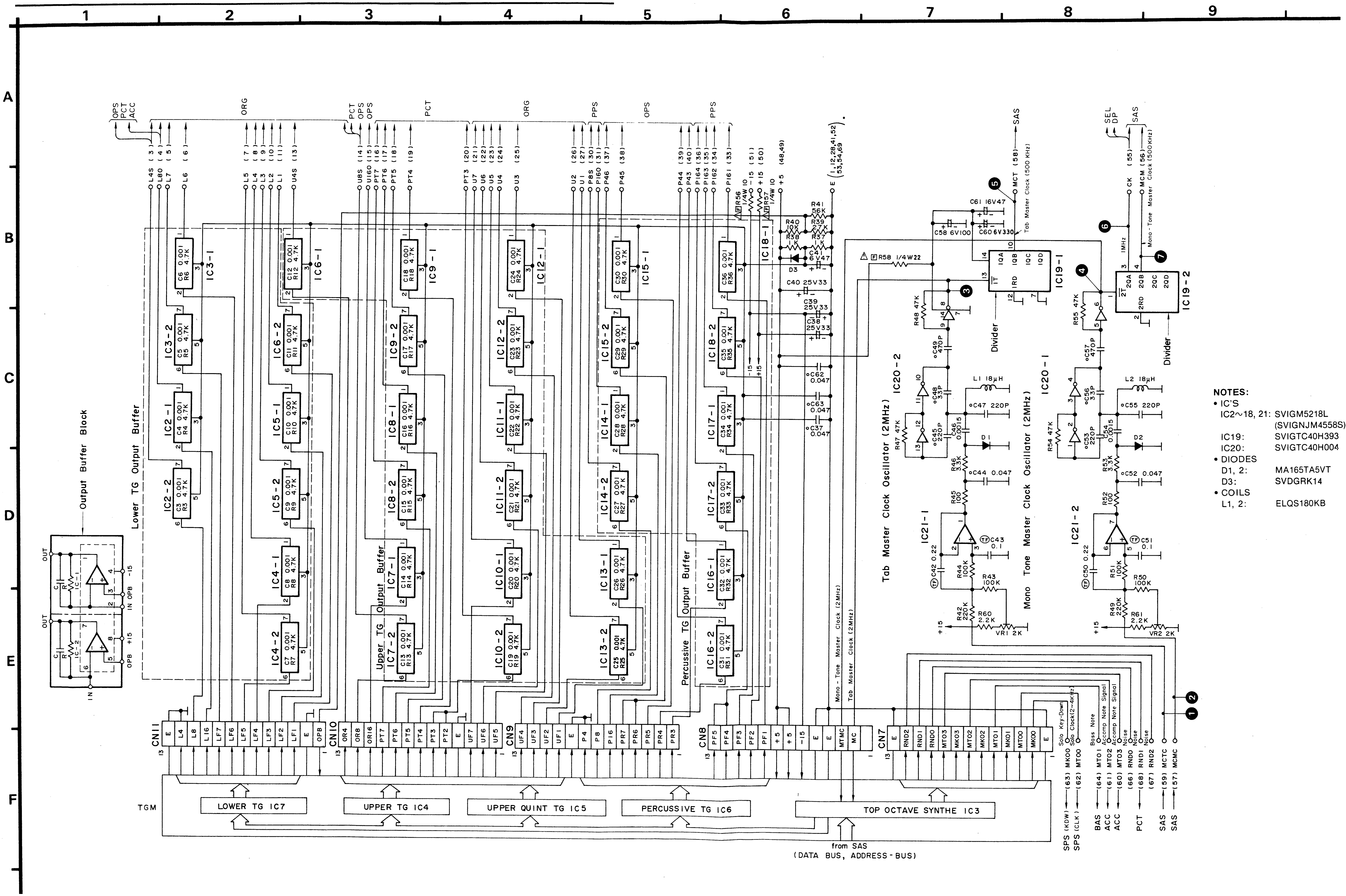
D1
D2
D3
D4
D5
D6
D7
D8
D9
R21 8.2K
R20 10K
R1 820
C9 1000P
R19 10K
R2 56K
C1 35V0.47
C2 35V0.47
C3 35V0.47
C4 35V0.47
C5 35V0.47
C6 35V0.47
C7 35V0.47
C8 35V0.47
Z1
Z2
Z3
Z4

**SXPG12341**

NOTES:
- DIODES
  D1~9: MA165TA5VT
- COMPONENTS COMBINATIONS
  Z1, 2: SREGLN4Y474J
  Z3, 4: SREGLN4Y565J



# TONE GENERATOR CIRCUIT DIAGRAM (TG)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
Output Buffer Block
Lower TG Output Buffer
Upper TG Output Buffer
Percussive TG Output Buffer
IC2-1
IC2-2
IC3-1
IC3-2
IC4-1
IC4-2
IC5-1
IC5-2
IC6-1
IC6-2
IC7-1
IC7-2
IC8-1
IC8-2
IC9-1
IC9-2
IC10-1
IC10-2
IC11-1
IC11-2
IC12-1
IC12-2
IC13-1
IC13-2
IC14-1
IC14-2
IC15-1
IC15-2
IC16-1
IC16-2
IC17-1
IC17-2
IC18-1
IC18-2
IC19-1
IC19-2
IC20-1
IC20-2
IC21-1
IC21-2
Divider
Tab Master Clock Oscillator (2MHz)
Mono Tone Master Clock Oscillator (2MHz)
Tab Master Clock (500 KHz)
Mono-Tone Master Clock (500KHz)
Mono-Tone Master Clock (2MHz)
Tab Master Clock (2MHz)
OPS
PCT
ACC
ORG
PPS
SAS
SEL
DP
VR1 2K
VR2 2K
L1 18μH
L2 18μH
CN7
CN8
CN9
CN10
CN11
TGM
LOWER TG IC7
UPPER TG IC4
UPPER QUINT TG IC5
PERCUSSIVE TG IC6
TOP OCTAVE SYNTHE IC3
from SAS
(DATA BUS, ADDRESS-BUS)
Solo Key-Down
Solo Clock (2~4KHz)
Bass Note
Accomp Note Signal
Noise
SPS (KDW)
SPS (CLK)
BAS
ACC
PCT
SAS

NOTES:

- IC'S

| | |
|---|---|
| IC2~18, 21: | SVIGM5218L<br>(SVIGNJM4558S) |
| IC19: | SVIGTC40H393 |
| IC20: | SVIGTC40H004 |

- DIODES

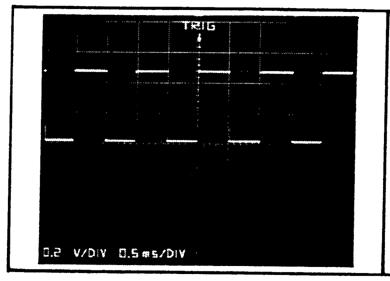
| | |
|---|---|
| D1, 2: | MA165TA5VT |
| D3: | SVDGRK14 |

- COILS

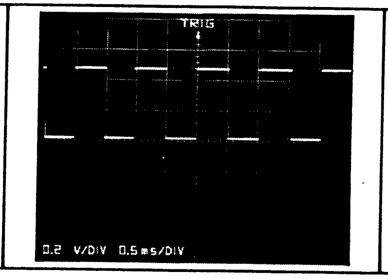
| | |
|---|---|
| L1, 2: | ELQS180KB |

# TONE GENERATOR CIRCUIT BOARD (TG)

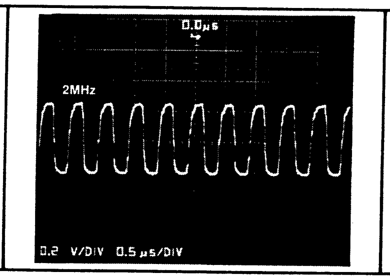
❶ Tab Master Clock Control



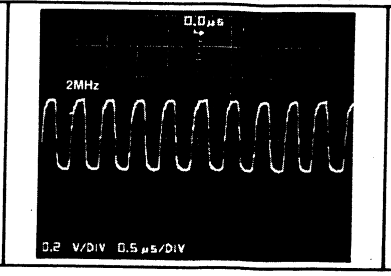
❷ Mono-Tone Master Clock Control



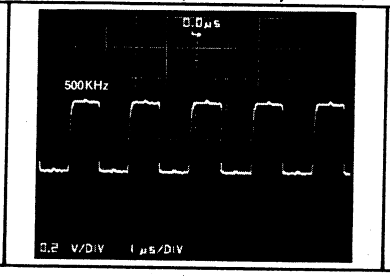
❸ Tab Master Clock



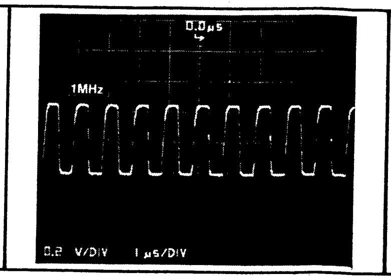
❹ Mono-Tone Master Clock



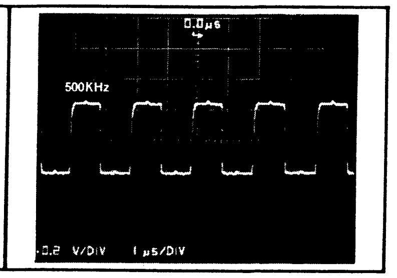
❺ Tab Clock (500KHz)



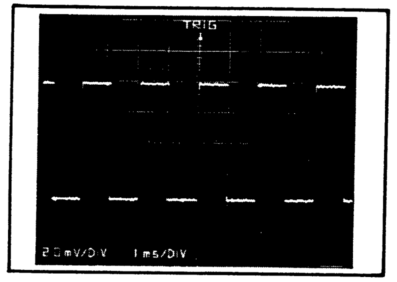
❻ 1MHz Clock



❼ Mono-Tone Clock (500KHz)

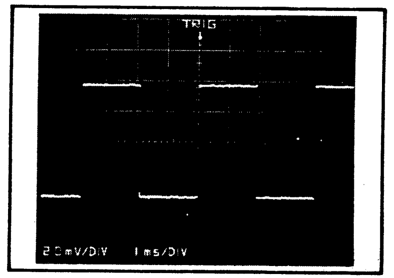


**L80** Terminal



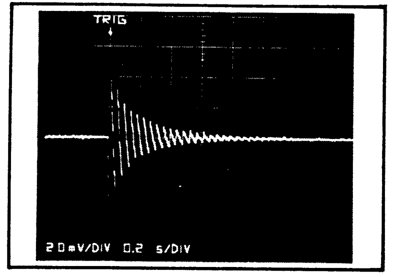
- Lower Key............................C4

**U160** Terminal

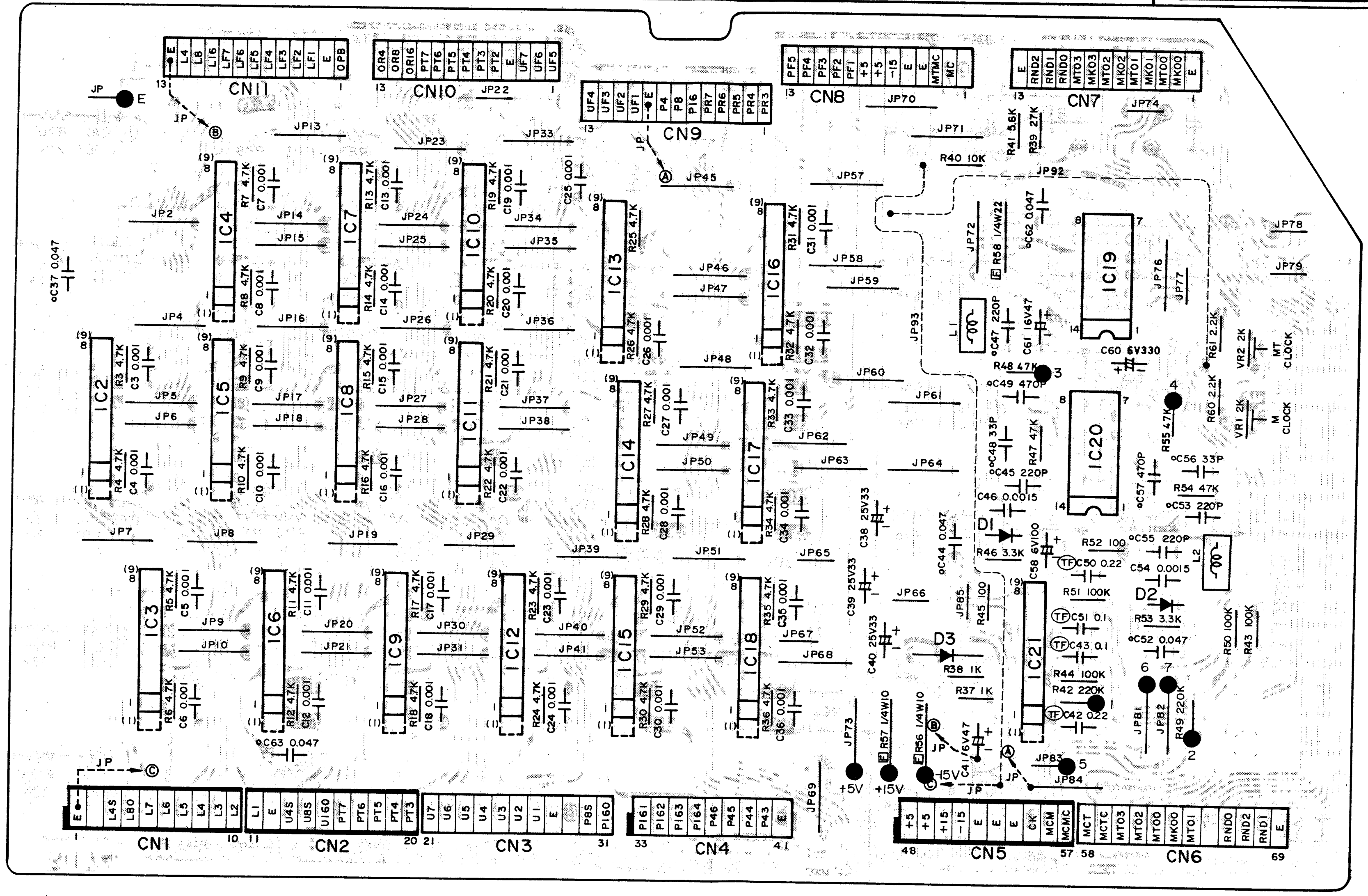


- Upper Key............................C4

**P8S** Terminal

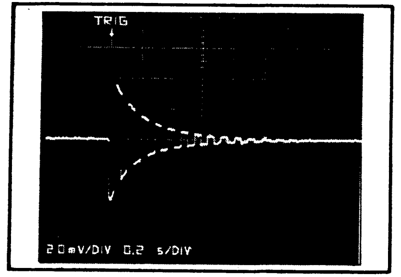


- Percussive Presets.............on
- Upper Key......C4 • Sustain......Step 3


CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN10
CN11
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
D1
D2
D3
+5V
+15V
-15V
VR1 2K
VR2 2K

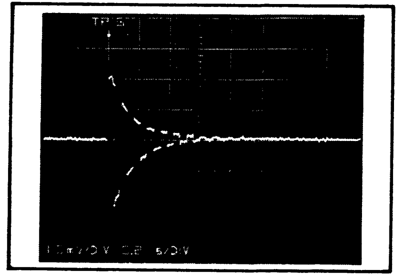
**SXPGB11743**

**P160** Terminal



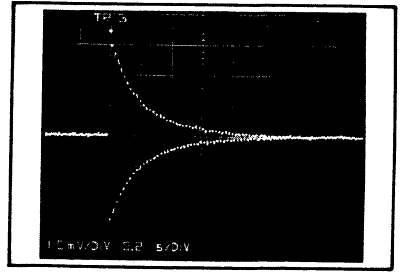
- Percussive Presets.............on
- Upper Key......C4 • Sustain......Step 3

**P163** Terminal (P161~P164)



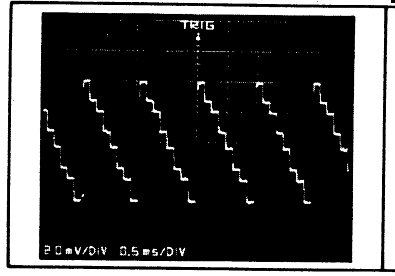
- Percussive Presets.............on
- Upper Key......C4 • Sustain......Step 3

**P45** Terminal (P43~P46)



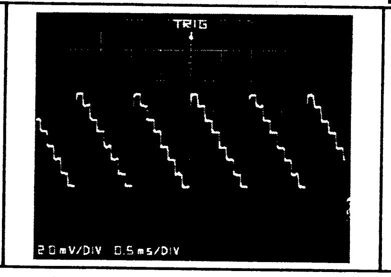
- Percussive Presets.............on
- Upper Key......C4 • Sustain......Step 3

**L4S** Terminal



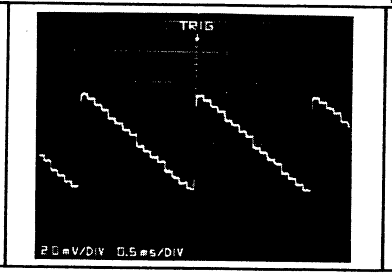
- Lower Key............................C4

**U4S** Terminal



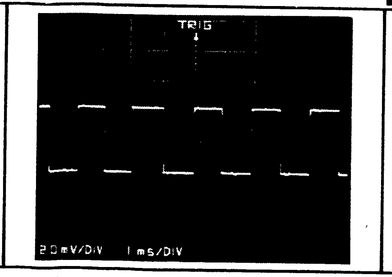
- Upper Key............................C4

**U8S** Terminal



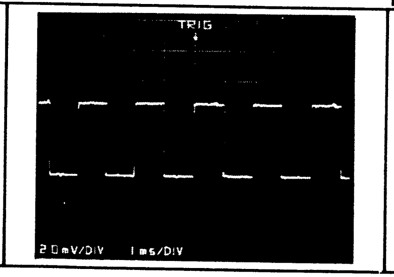
- Upper Key............................C4

**U4** Terminal (U1~U7)



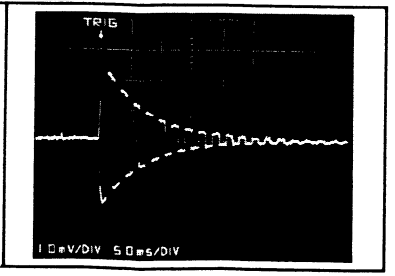
- Upper Tab............................Flute 8'
- Upper Key............................C4

**L4** Terminal (L1~L7)



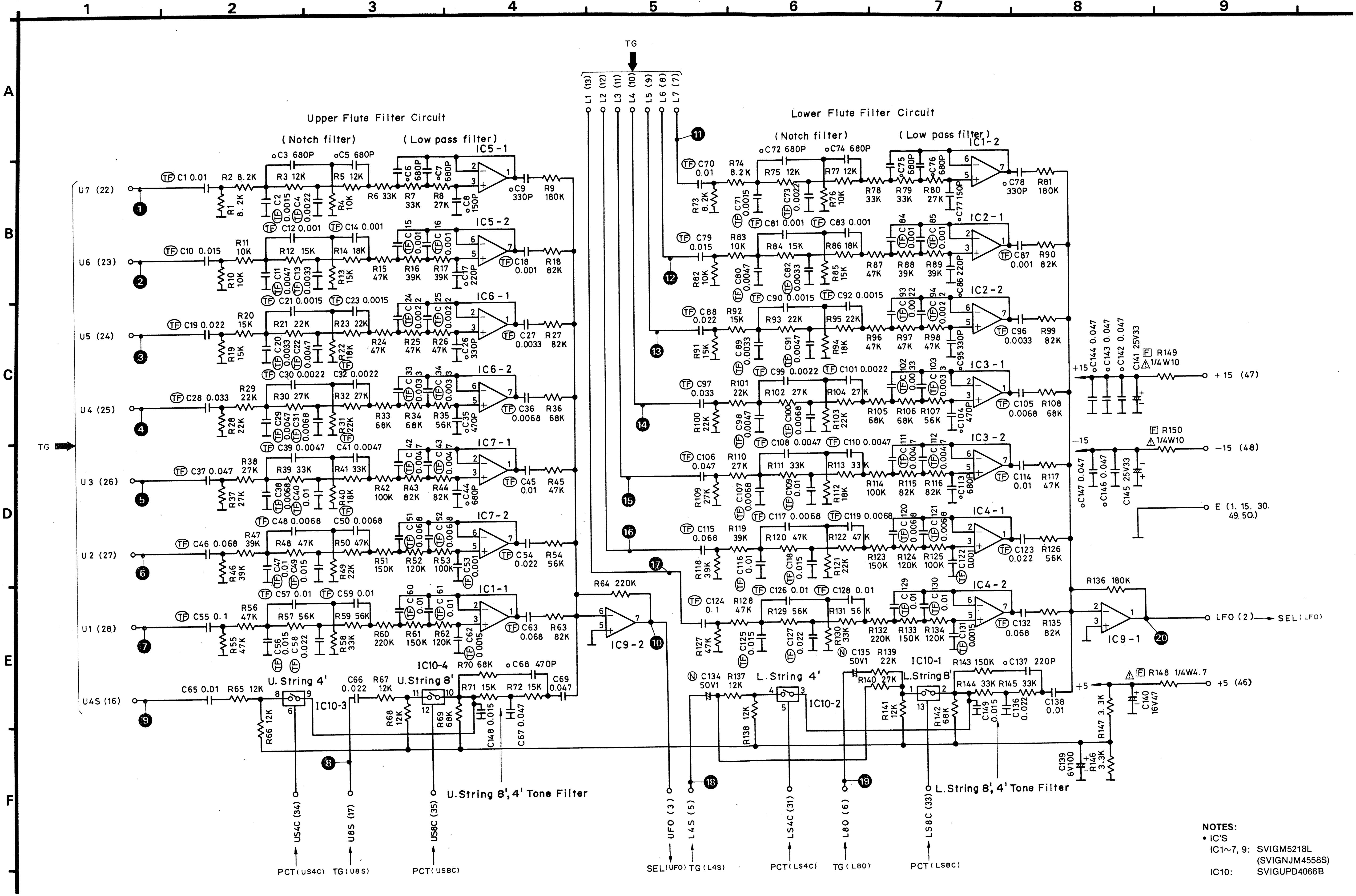
- Lower Tab............................Flute 8'
- Lower Key............................C4

**PT5** Terminal (PT3~PT7)



- Percussive Tone..................4'
- Upper Key............................C4

# ORGAN CIRCUIT DIAGRAM (ORG)

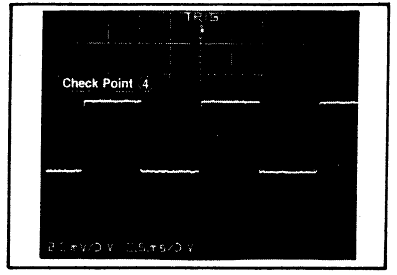

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
TG
L1 (13)
L2 (12)
L3 (11)
L4 (10)
L5 (9)
L6 (8)
L7 (7)
Upper Flute Filter Circuit
(Notch filter)
(Low pass filter)
Lower Flute Filter Circuit
U7 (22)
U6 (23)
U5 (24)
U4 (25)
U3 (26)
U2 (27)
U1 (28)
U4S (16)
TG
C1 0.01
R2 8.2K
R1 8.2K
C3 680P
C5 680P
R3 12K
R5 12K
C2 0.0015
C4 0.0022
R4 10K
R6 33K
C6 680P
C7 680P
R7 33K
R8 27K
C8 150P
IC5-1
C9 330P
R9 180K
C10 0.015
R11 10K
R10 10K
C12 0.001
C14 0.001
R12 15K
R14 18K
C11 0.0047
C13 0.0033
R13 15K
R15 47K
C15 0.001
C16 0.001
R16 39K
R17 39K
C17 220P
IC5-2
C18 0.001
R18 82K
C19 0.022
R20 15K
R19 15K
C21 0.0015
C23 0.0015
R21 22K
R23 22K
C20 0.0033
C22 0.0047
R22 18K
R24 47K
C24 0.0022
C25 0.0022
R25 47K
R26 47K
C26 330P
IC6-1
C27 0.0033
R27 82K
C28 0.033
R29 22K
R28 22K
C30 0.0022
C32 0.0022
R30 27K
R32 27K
C29 0.0047
C31 0.0068
R31 22K
R33 68K
C33 0.0033
C34 0.0033
R34 68K
R35 56K
C35 470P
IC6-2
C36 0.0068
R36 68K
C37 0.047
R38 27K
R37 27K
C39 0.0047
C41 0.0047
R39 33K
R41 33K
C38 0.0068
C40 0.01
R40 18K
R42 100K
C42 0.0047
C43 0.0047
R43 82K
R44 82K
C44 680P
IC7-1
C45 0.01
R45 47K
C46 0.068
R47 39K
R46 39K
C48 0.0068
C50 0.0068
R48 47K
R50 47K
C47 0.01
C49 0.015
R49 22K
R51 150K
C51 0.0068
C52 0.0068
R52 120K
R53 100K
C53 0.001
IC7-2
C54 0.022
R54 56K
C55 0.1
R56 47K
R55 47K
C57 0.01
C59 0.01
R57 56K
R59 56K
C56 0.015
C58 0.022
R58 33K
R60 220K
C60 0.01
C61 0.01
R61 150K
R62 120K
C62 0.0015
IC1-1
C63 0.068
R63 82K
R64 220K
IC9-2
C65 0.01
R65 12K
R66 12K
U. String 4'
IC10-3
C66 0.022
R67 12K
R68 12K
IC10-4
U.String 8'
R69 68K
R70 68K
C68 470P
R71 15K
R72 15K
C69 0.047
C148 0.015
C67 0.047
U.String 8', 4' Tone Filter
US4C (34)
U8S (17)
US8C (35)
PCT (US4C)
TG (U8S)
PCT (US8C)
UFO (3)
L4S (5)
LS4C (31)
L8O (6)
LS8C (33)
SEL (UFO)
TG (L4S)
PCT (LS4C)
TG (L8O)
PCT (LS8C)
C70 0.01
R74 8.2K
R73 8.2K
C72 680P
C74 680P
R75 12K
R77 12K
C71 0.0015
C73 0.0022
R76 10K
R78 33K
C75 680P
C76 680P
R79 33K
R80 27K
C77 150P
IC1-2
C78 330P
R81 180K
C79 0.015
R83 10K
R82 10K
C81 0.001
C83 0.001
R84 15K
R86 18K
C80 0.0047
C82 0.0033
R85 15K
R87 47K
C84 0.001
C85 0.001
R88 39K
R89 39K
C86 220P
IC2-1
C87 0.001
R90 82K
C88 0.022
R92 15K
R91 15K
C90 0.0015
C92 0.0015
R93 22K
R95 22K
C89 0.0033
C91 0.0047
R94 18K
R96 47K
C93 0.0022
C94 0.0022
R97 47K
R98 47K
C95 330P
IC2-2
C96 0.0033
R99 82K
C97 0.033
R101 22K
R100 22K
C99 0.0022
C101 0.0022
R102 27K
R104 27K
C98 0.0047
C100 0.0068
R103 22K
R105 68K
C102 0.0033
C103 0.0033
R106 68K
R107 56K
C104 470P
IC3-1
C105 0.0068
R108 68K
C106 0.047
R110 27K
R109 27K
C108 0.0047
C110 0.0047
R111 33K
R113 33K
C107 0.0068
C109 0.01
R112 18K
R114 100K
C111 0.0047
C112 0.0047
R115 82K
R116 82K
C113 680P
IC3-2
C114 0.01
R117 47K
C115 0.068
R119 39K
R118 39K
C117 0.0068
C119 0.0068
R120 47K
R122 47K
C116 0.01
C118 0.015
R121 22K
R123 150K
C120 0.0068
C121 0.0068
R124 120K
R125 100K
C122 0.001
IC4-1
C123 0.022
R126 56K
C124 0.1
R128 47K
R127 47K
C126 0.01
C128 0.01
R129 56K
R131 56K
C125 0.015
C127 0.022
R130 33K
R132 220K
C129 0.01
C130 0.01
R133 150K
R134 120K
C131 0.0015
IC4-2
C132 0.068
R135 82K
R136 180K
IC9-1
LFO (2) → SEL (LFO)
C134 50V1
R137 12K
R138 12K
L.String 4'
IC10-2
C135 50V1
R139 22K
R140 27K
IC10-1
L.String 8'
R141 12K
R142 68K
R143 150K
C137 220P
R144 33K
R145 33K
C149 0.015
C136 0.022
C138 0.01
L.String 8', 4' Tone Filter
+15
C144 0.047
C143 0.047
C142 0.047
C141 25V33
F R149 ⚠ 1/4W10
+15 (47)
-15
F R150 ⚠ 1/4W10
-15 (48)
C147 0.047
C146 0.047
C145 25V33
E (1. 15. 30. 49. 50.)
+5
⚠ F R148 1/4W4.7
+5 (46)
R147 3.3K
C140 16V47
C139 6V100
R146 3.3K
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱
⑲
⑳

NOTES:
- IC'S

IC1~7, 9: SVIGM5218L
(SVIGNJM4558S)
IC10: SVIGUPD4066B

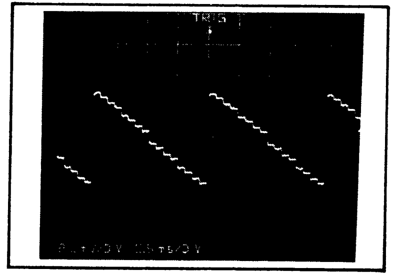
# ORGAN CIRCUIT BOARD (ORG)

❶,❷,❸,❹,❺,❻,❼



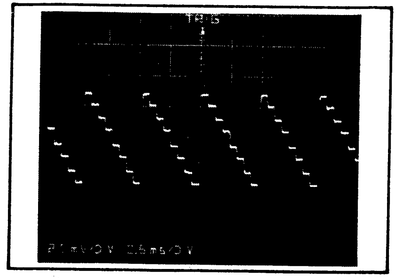
- Upper Tab............................Flute 8′
- Upper Key............................C4

❽



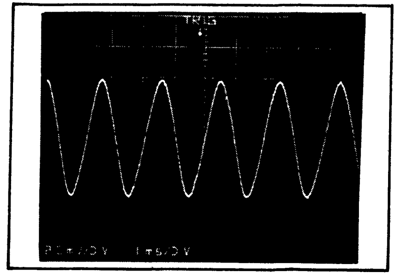
- Upper Tab............................String 8′
- Upper Key............................C4

❾

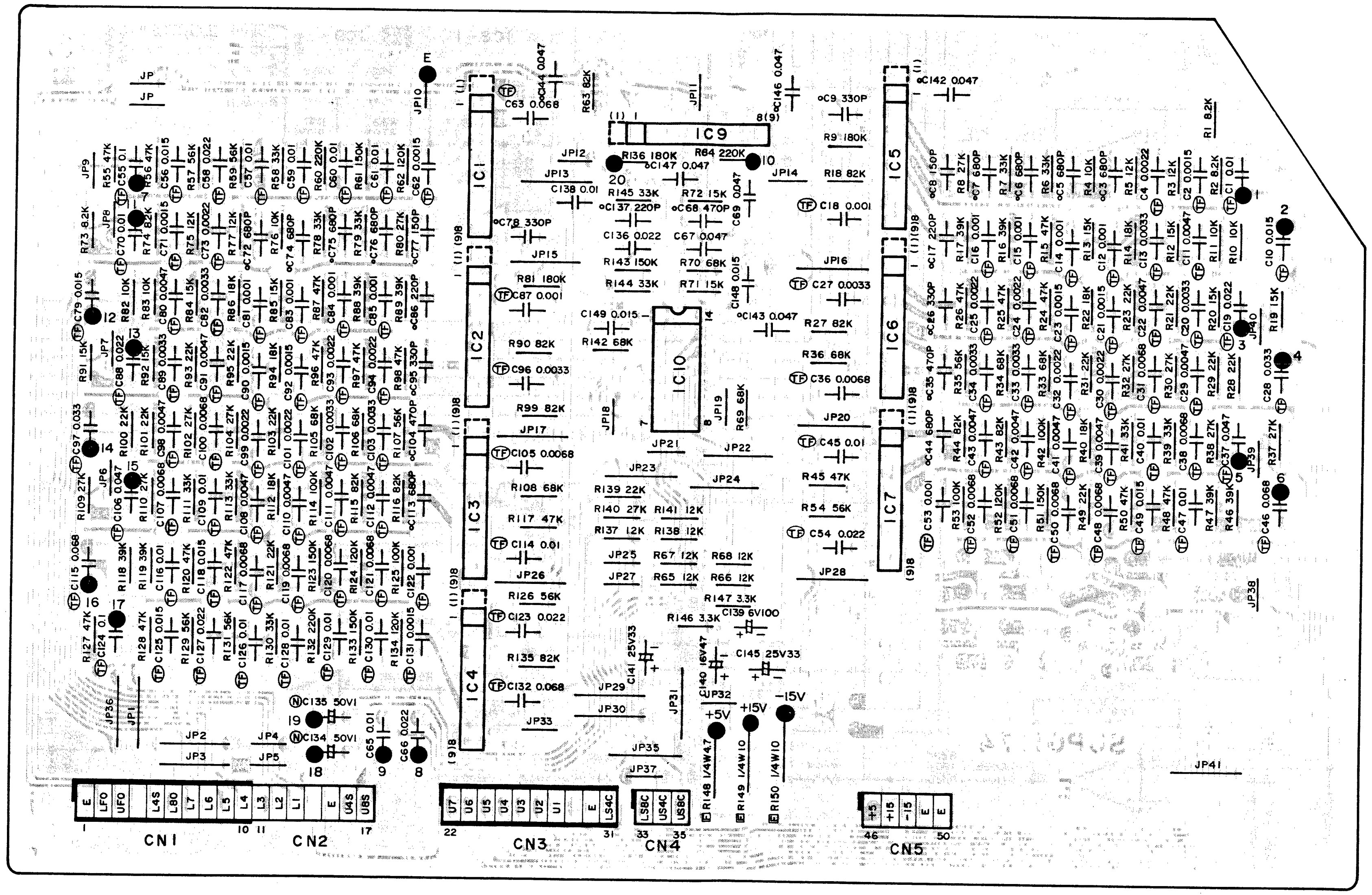


- Upper Tab............................String 4′
- Upper Key............................C4

❿

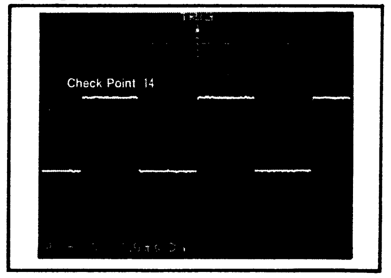


- Upper Tab............................Flute 8′
- Upper Key............................C4


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC9
IC10
CN1
CN2
CN3
CN4
CN5
+5V
+15V
-15V
E
LFO
UFO
L4S
L8O
L7
L6
L5
L4
L3
L2
L1
U4S
U8S
U7
U6
U5
U4
U3
U2
U1
LS4C
LS8C
US4C
US8C
+5
+15
-15

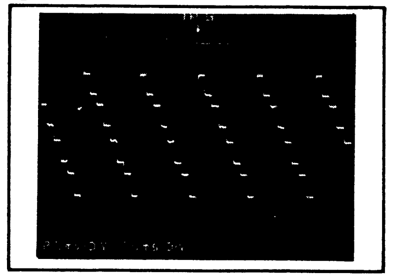
**SXPGA11742**

⓫,⓬,⓭,⓮,⓯,⓰,⓱



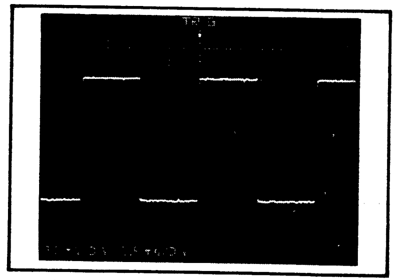
- Lower Tab............................Flute 8′
- Lower Key............................C4

⓲



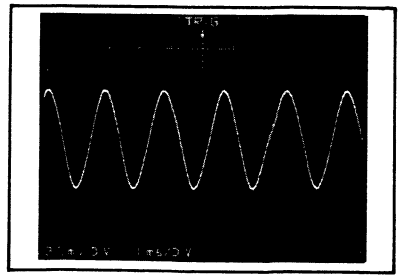
- Lower Tab............................String 4′
- Lower Key............................C4

⓳



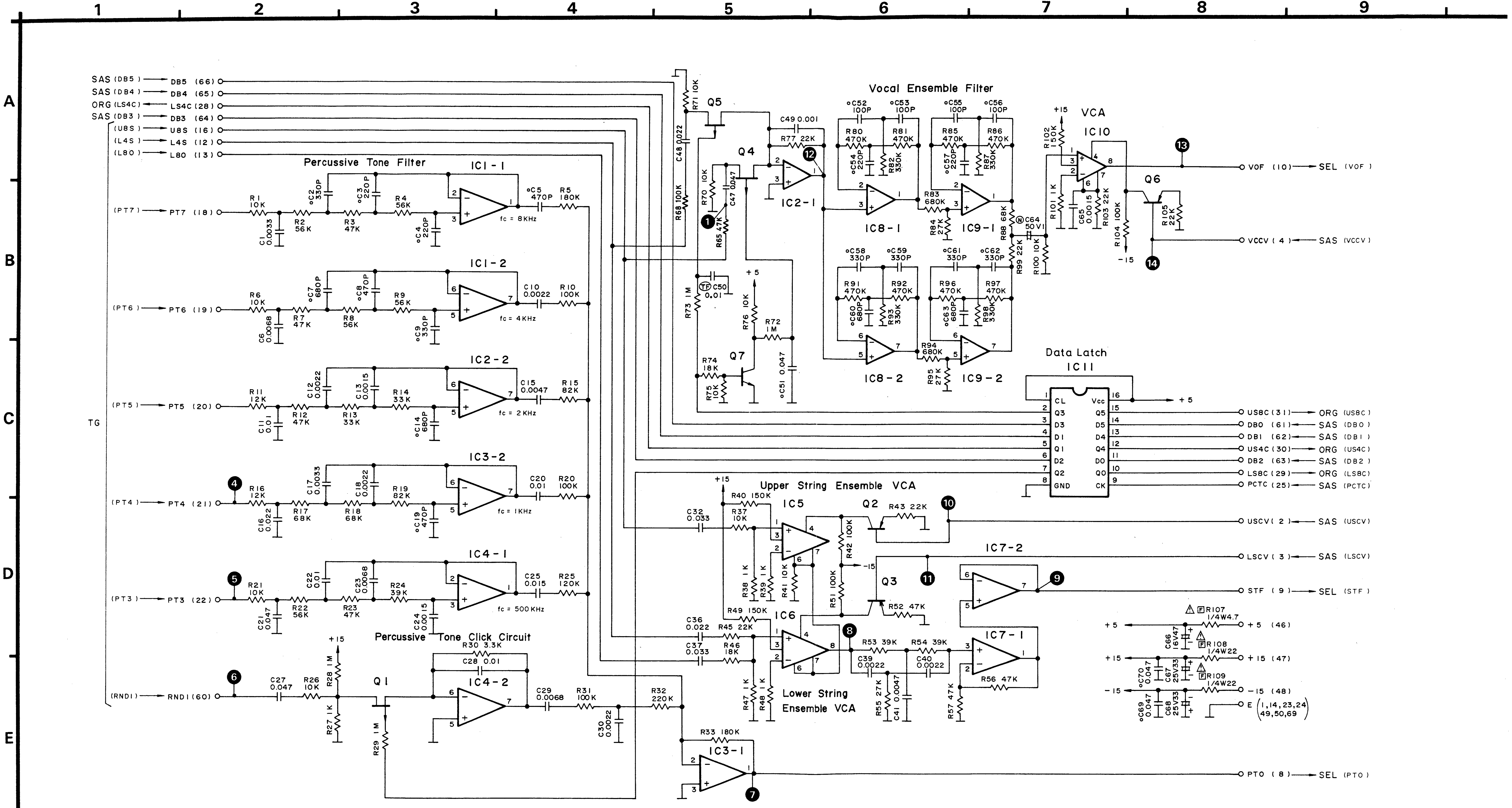
- Lower Tab............................String 8′
- Lower Key............................C4

⓴



- Lower Tab............................Flute 8′
- Lower Key............................C4

# PERCUSSIVE TONE CIRCUIT DIAGRAM (PCT)

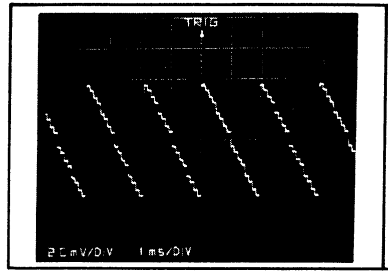

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
SAS (DB5) → DB5 (66)
SAS (DB4) → DB4 (65)
ORG (LS4C) ← LS4C (28)
SAS (DB3) → DB3 (64)
(U8S) → U8S (16)
(L4S) → L4S (12)
(L80) → L80 (13)
TG
(PT7) → PT7 (18)
(PT6) → PT6 (19)
(PT5) → PT5 (20)
(PT4) → PT4 (21)
(PT3) → PT3 (22)
(RND1) → RND1 (60)
Percussive Tone Filter
IC1-1
IC1-2
IC2-2
IC3-2
IC4-1
fc = 8KHz
fc = 4KHz
fc = 2KHz
fc = 1KHz
fc = 500KHz
R1 10K
C1 0.0033
R2 56K
C2 330P
R3 47K
C3 220P
R4 56K
C4 220P
C5 470P
R5 180K
R6 10K
C6 0.0068
R7 47K
C7 680P
R8 56K
C8 470P
R9 56K
C9 330P
C10 0.0022
R10 100K
R11 12K
C11 0.01
R12 47K
C12 0.0022
R13 33K
C13 0.0015
R14 33K
C14 680P
C15 0.0047
R15 82K
R16 12K
C16 0.022
R17 68K
C17 0.0033
R18 68K
C18 0.0022
R19 82K
C19 470P
C20 0.01
R20 100K
R21 10K
C21 0.047
R22 56K
C22 0.01
R23 47K
C23 0.0068
R24 39K
C24 0.0015
C25 0.015
R25 120K
Percussive Tone Click Circuit
+15
C27 0.047
R26 10K
R28 1M
R27 1K
Q1
R29 1M
R30 3.3K
C28 0.01
IC4-2
C29 0.0068
R31 100K
C30 0.0022
R32 220K
R33 180K
IC3-1
R71 10K
Q5
C48 0.022
R68 100K
Q4
R70 10K
C47 0.047
R65 4.7K
C49 0.001
R77 22K
IC2-1
C50 0.01
R73 1M
+5
R76 10K
R72 1M
C51 0.047
Q7
R74 18K
R75 10K
Vocal Ensemble Filter
C52 100P
C53 100P
R80 470K
R81 470K
C54 220P
R82 330K
IC8-1
C55 100P
C56 100P
R85 470K
R86 470K
C57 220P
R87 330K
R83 680K
R84 27K
IC9-1
R88 68K
C64 50V1
R99 22K
R100 10K
C58 330P
C59 330P
R91 470K
R92 470K
C60 680P
R93 330K
IC8-2
C61 330P
C62 330P
R96 470K
R97 470K
C63 680P
R98 330K
R94 680K
R95 27K
IC9-2
VCA
IC10
R102 150K
R101 1K
C65 0.0015
R103 22K
R104 100K
-15
Q6
R105 22K
VOF (10) → SEL (VOF)
VCCV (4) ← SAS (VCCV)
Data Latch
IC11
CL
Q3
D3
D1
Q1
D2
Q2
GND
Vcc
Q5
D5
D4
Q4
D0
Q0
CK
+5
US8C (31) → ORG (US8C)
DB0 (61) ← SAS (DB0)
DB1 (62) ← SAS (DB1)
US4C (30) → ORG (US4C)
DB2 (63) ← SAS (DB2)
LS8C (29) → ORG (LS8C)
PCTC (25) ← SAS (PCTC)
Upper String Ensemble VCA
IC5
Q2
R43 22K
C32 0.033
R40 150K
R37 10K
R42 100K
R38 1K
R39 1K
R41 10K
R51 100K
Q3
R52 47K
USCV (2) ← SAS (USCV)
LSCV (3) ← SAS (LSCV)
IC7-2
STF (9) → SEL (STF)
R49 150K
IC6
C36 0.022
R45 22K
C37 0.033
R46 18K
R47 1K
R48 1K
Lower String Ensemble VCA
R53 39K
R54 39K
C39 0.0022
C40 0.0022
R55 27K
C41 0.0047
R57 47K
IC7-1
R56 47K
PTO (8) → SEL (PTO)
R107 1/4W4.7
R108 1/4W22
R109 1/4W22
C66 16V47
C70 0.047
C67 25V33
C69 0.047
C68 25V33
+5 (46)
+15 (47)
-15 (48)
E (1,14,23,24 49,50,69)
TP
N
1
4
5
6
7
8
9
10
11
12
13
14

NOTES:

- IC'S
  - IC1~4, 7~9: SVIGM5218L (SVIGNJM4558S)
  - IC5, 6, 10: SVIGBA6110
  - IC11: SVIGTC40174B
- TRANSISTORS
  - Q1, 4, 5: 2SJ40CD
  - Q2, 3, 6: 2SA1015GR
  - Q7: 2SC2320LFG

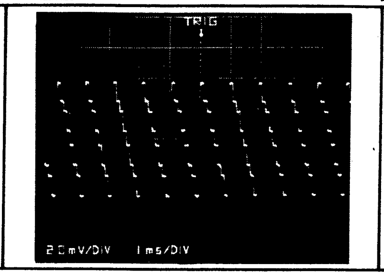
# PERCUSSIVE TONE CIRCUIT BOARD (PCT)

**U8S Terminal**



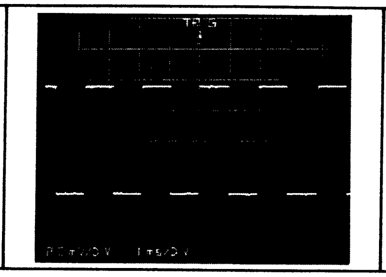
- Upper Key............................C4

**L4S Terminal**



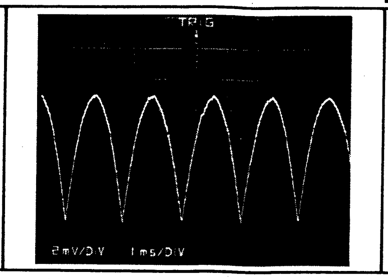
- Lower Key ...........................C4

**L80 Terminal**



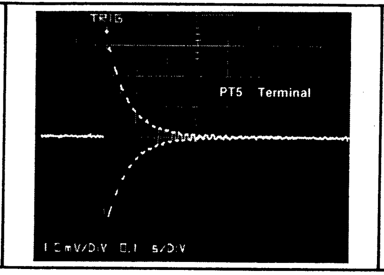
- Lower Key ...........................C4

**❶**



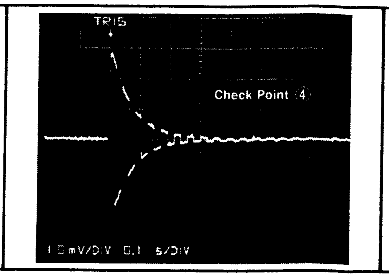
- U. Vocal Ensemble..............on
- Upper Key............................C4

**PT7 ~ PT5 Terminal**



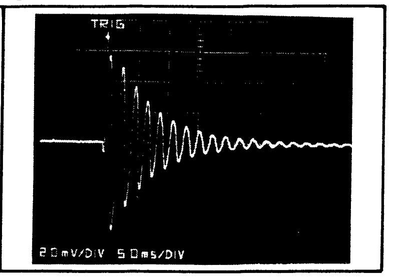
- Percussive Tone..................4′
- Upper Key............................C4

**❹ ~ ❻**



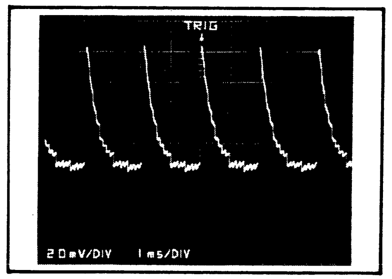
- Percussive Tone..................4′
- Upper Key............................C3

**❼ Percussive Tone**



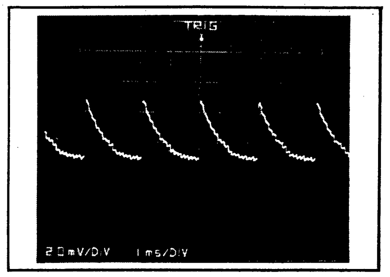
- Percussive Tone..................4′
- Upper Key............................C4

**❽ U. String Ensemble**

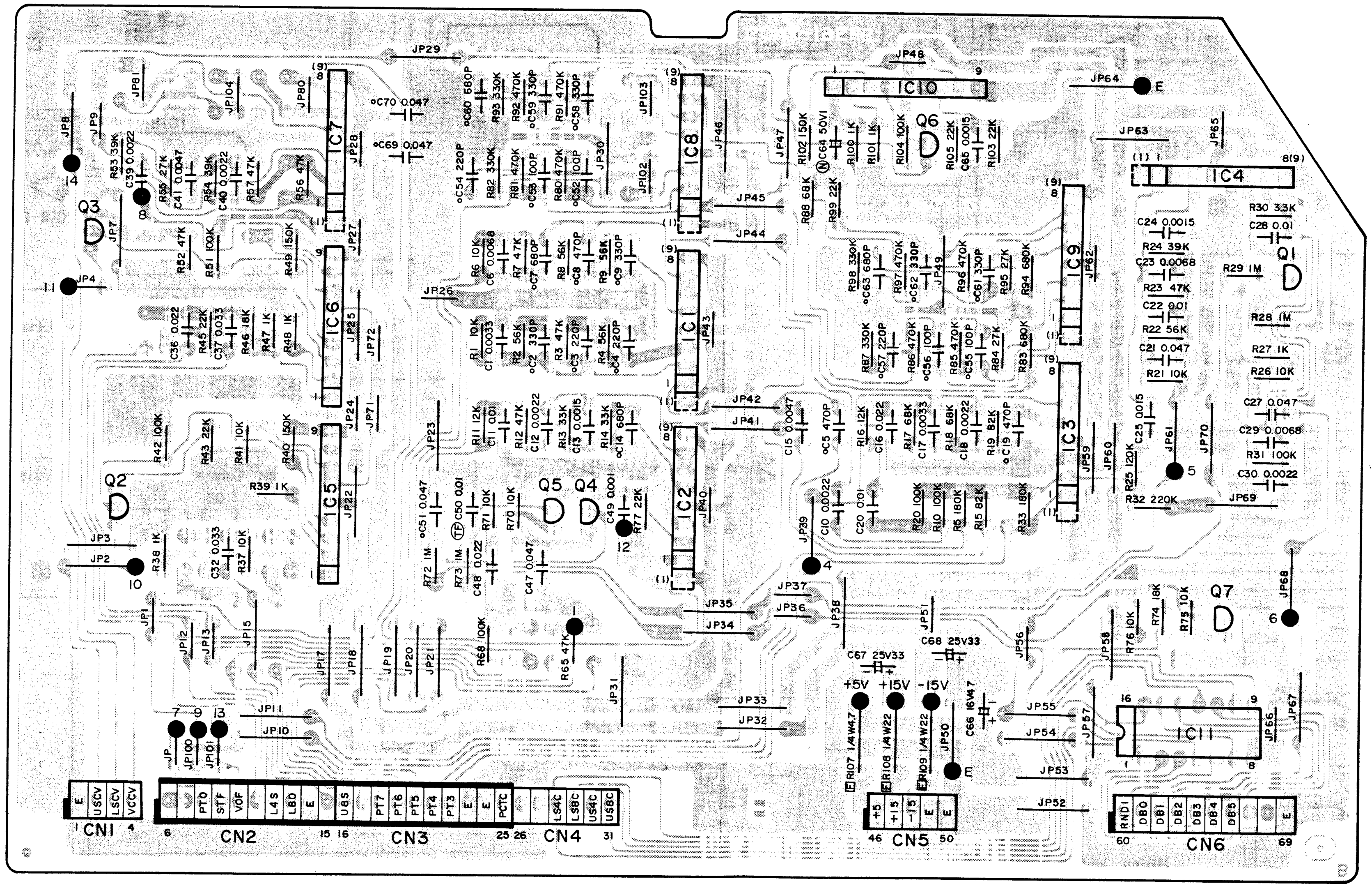


- U. String Ensemble.............on
- Volume..................................max
- Upper Key .......................C4

**❽ L. String Ensemble**

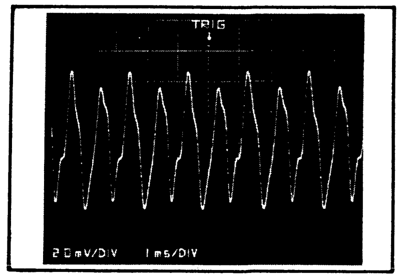


- L. String Ensemble.............on
- Volume..................................max
- Lower Key ...........................C4


IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
Q1
Q2
Q3
Q4
Q5
Q6
Q7
CN1
CN2
CN3
CN4
CN5
CN6
+5V
+15V
-15V
E
PT0
STF
VOF
L4S
L80
U8S
PT7
PT6
PT5
PT4
PT3
PCTC
L54C
L58C
U54C
U58C
USCV
LSCV
VCCV
RND1
DB0
DB1
DB2
DB3
DB4
DB5

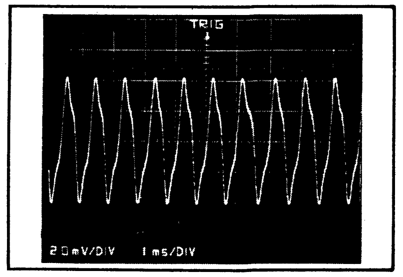
**SXPG11294**

**⓭ U. Vocal Ensemble**



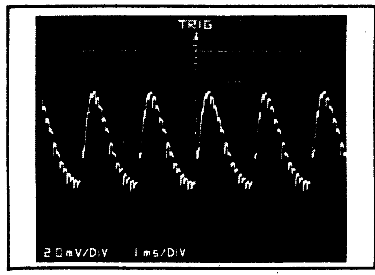
- U. Vocal Ensemble..............on
- Volume..................................max
- Upper Key............................C4

**⓭ L. Vocal Ensemble**



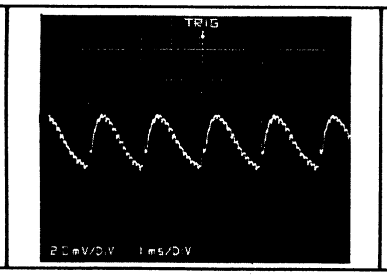
- L. Vocal Ensemble..............on
- Volume..................................max
- Lower Key ...........................C4

**❾ U. String Ensemble**



- U. String Ensemble.............on
- Volume..................................max
- Upper Key............................C4

**❾ L. String Ensemble**



- L. String Ensemble.............on
- Volume..................................max
- Lower Key ...........................C4

**❿ Volume Control**

- Step 1........................−2.9V
- Step 2........................−5.0V
- Step 3........................−8.0V
- Step 4........................−12.9V

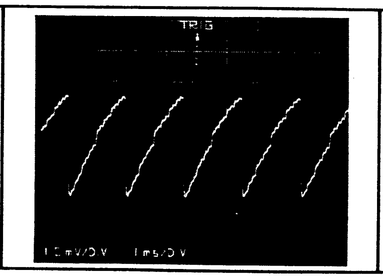
- Upper String Ensemble

**⓫ Volume Control**

- Step 1........................−2.9V
- Step 2........................−5.0V
- Step 3........................−8.0V
- Step 4........................−12.9V

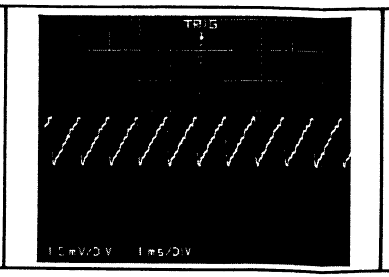
- Lower String Ensemble

**⓬ U. Vocal Ensemble**



- U. Vocal Ensemble..............on
- Upper Key............................C4

**⓬ L. Vocal Ensemble**



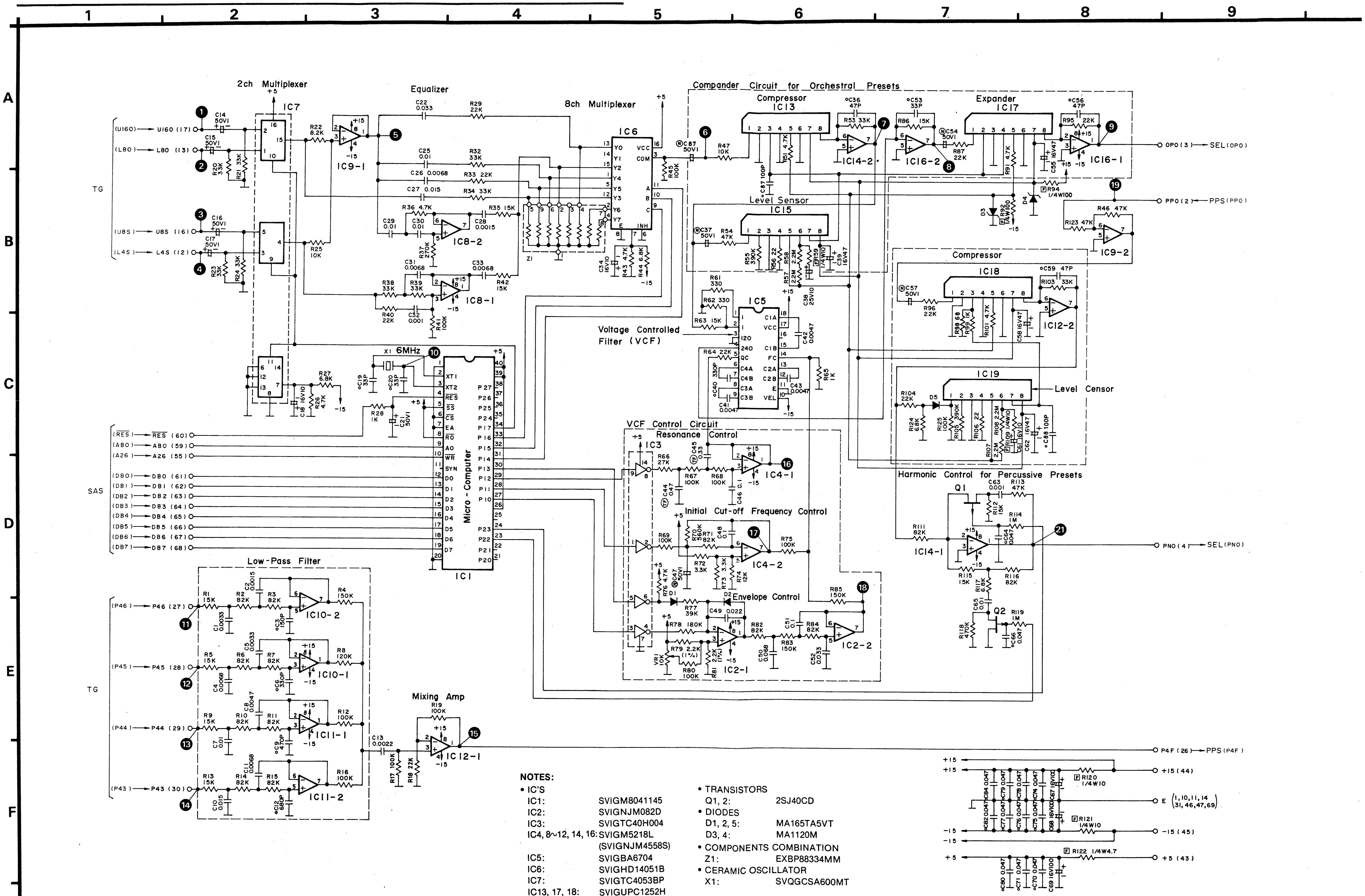
- L. Vocal Ensemble..............on
- Lower Key ...........................C4

**⓮ Volume Control**

- Step 1........................−2.9V
- Step 2........................−4.5V
- Step 3........................−7.5V
- Step 4........................−12.7V

- U & L Vocal Ensemble

# ORCHESTRAL PRESETS CIRCUIT DIAGRAM (OPS)



1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
2ch Multiplexer
IC7
Equalizer
8ch Multiplexer
IC6
Compander Circuit for Orchestral Presets
Compressor
IC13
Expander
IC17
Level Sensor
IC15
Compressor
IC18
IC19
Level Censor
Voltage Controlled Filter (VCF)
IC5
VCF Control Circuit
Resonance Control
Initial Cut-off Frequency Control
Envelope Control
Harmonic Control for Percussive Presets
Low-Pass Filter
Mixing Amp
Micro - Computer
IC1
X1 6MHz
TG
SAS
Z1
Q1
Q2
IC9-1
IC8-2
IC8-1
IC14-2
IC16-2
IC16-1
IC9-2
IC12-2
IC14-1
IC4-1
IC4-2
IC2-1
IC2-2
IC3
IC10-2
IC10-1
IC11-1
IC11-2
IC12-1
(U160) U160 (17)
(L80) L80 (13)
(U8S) U8S (16)
(L4S) L4S (12)
(RES) RES (60)
(AB0) AB0 (59)
(A26) A26 (55)
(DB0) DB0 (61)
(DB1) DB1 (62)
(DB2) DB2 (63)
(DB3) DB3 (64)
(DB4) DB4 (65)
(DB5) DB5 (66)
(DB6) DB6 (67)
(DB7) DB7 (68)
(P46) P46 (27)
(P45) P45 (28)
(P44) P44 (29)
(P43) P43 (30)
OPO (3) SEL (OPO)
PPO (2) PPS (PPO)
PNO (4) SEL (PNO)
P4F (26) PPS (P4F)
+15 (44)
E (1, 10, 11, 14 / 31, 46, 47, 69)
-15 (45)
+5 (43)

NOTES:

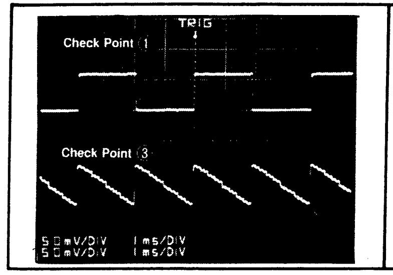
- IC'S
  - IC1: SVIGM8041145
  - IC2: SVIGNJM082D
  - IC3: SVIGTC40H004
  - IC4, 8~12, 14, 16: SVIGM5218L (SVIGNJM4558S)
  - IC5: SVIGBA6704
  - IC6: SVIGHD14051B
  - IC7: SVIGTC4053BP
  - IC13, 17, 18: SVIGUPC1252H
  - IC15, 19: SVIGUPC1253H
- TRANSISTORS
  - Q1, 2: 2SJ40CD
- DIODES
  - D1, 2, 5: MA165TA5VT
  - D3, 4: MA1120M
- COMPONENTS COMBINATION
  - Z1: EXBP88334MM
- CERAMIC OSCILLATOR
  - X1: SVQGCSA600MT

# ORCHESTRAL PRESETS CIRCUIT BOARD (OPS)

1 2 3 4 5 6 7 8 9

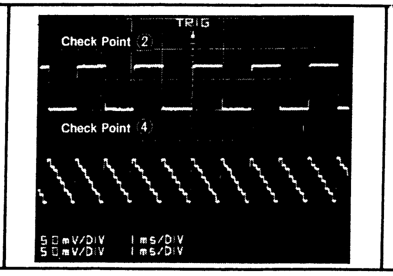
A

❶, ❸



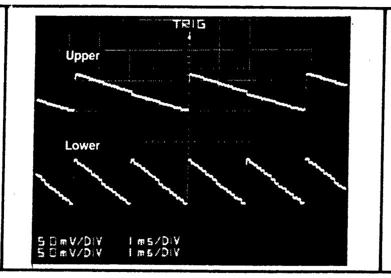
- U. Orchestral Presets
- Upper Key......................C4

❷, ❹



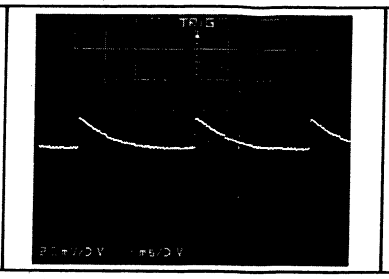
- L. Orchestral Presets
- Lower Key......................C4

❺



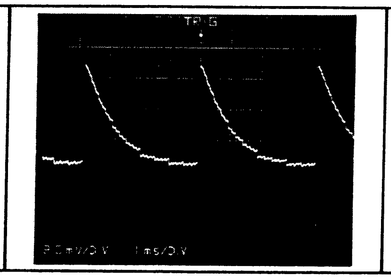
- U&L Orchestral Presets
- Upper or Lower Key............C4

❻



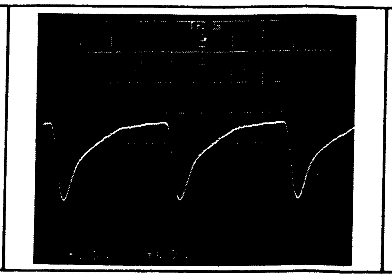
- Upper Orchestral Presets...Trombone
- Upper Key............................C4

❼



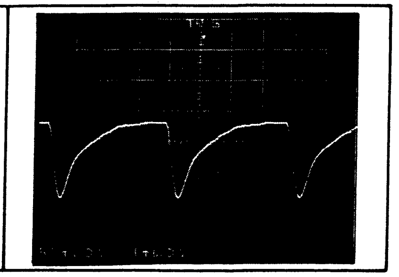
- Upper Orchestral Presets...Trombone
- Upper Key............................C4

❽



- Upper Orchestral Presets...Trombone
- Harmonic Control...............Center
- Upper Key............................C4

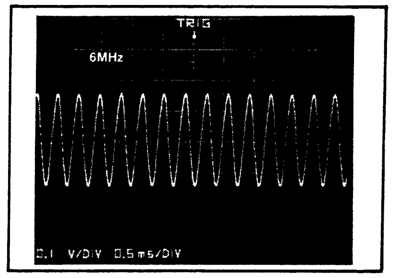
❾



- Upper Orchestral Presets...Trombone
- Harmonic Control...............Center
- Upper Key............................C4

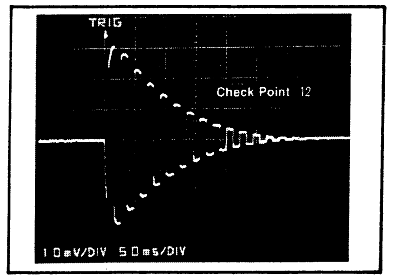
B

❿



C

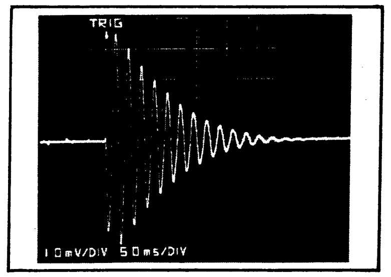
⓫ ~ ⓮



- Percussive Presets.............on
- Upper Key............................C4
- Sustain................................Step 1

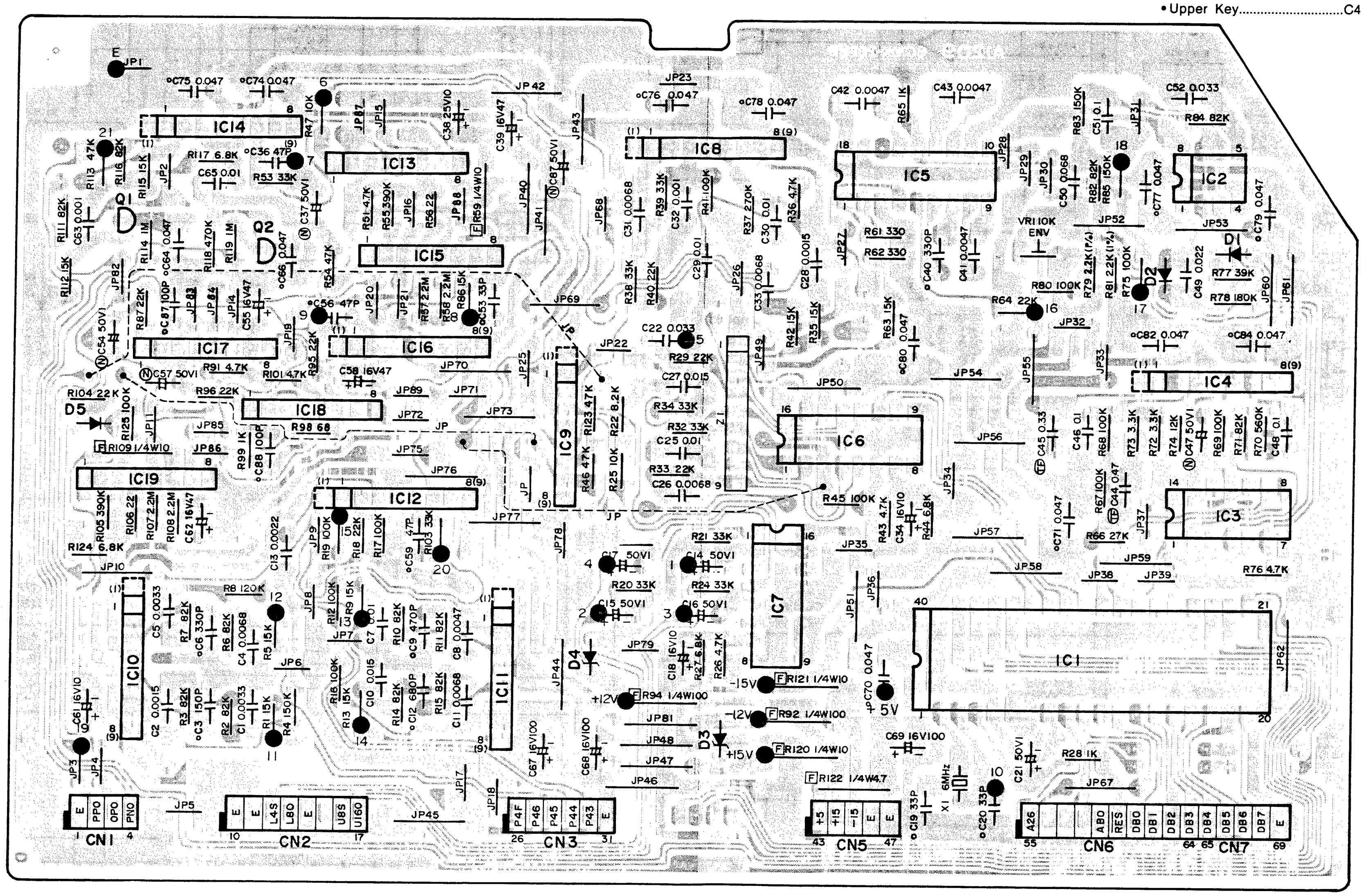
D

⓯



- Percussive Presets.............on
- Upper Key............................C4
- Sustain................................Step 1

E


E
JP1
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
Q1
Q2
D1
D2
D3
D4
D5
VR1 10K
ENV
X1 6MHz
+12V
-12V
+15V
-15V
+5V
CN1
CN2
CN3
CN5
CN6
CN7
PPO
OPO
PNO
L4S
L80
U8S
U160
P4F
P46
P45
P44
P43
A26
A80
RES
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7

**SXPGA12092**

### ⓰ Resonance Control

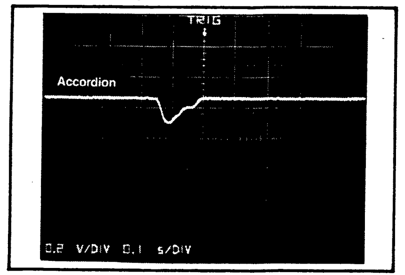
| | |
|---|---|
| Accordion | 0.6 V |
| Synthe brass | 0.9 V |
| Trombone | 1.1 V |
| Saxophone | 0.2 V |
| Clarinet | 0.6 V |
| Wah brass | 2.0 V |

### ⓱ Initial Cut-off Frequency Control

*Harmonic Control: Center
*Upper Key: C4

| | |
|---|---|
| Accordion | −10.8 V |
| Synthe brass | −7.6 V |
| Trombone | −4.3 V |
| Saxophone | −10.4 V |
| Clarinet | −6.7 V |
| Wah brass | −3.4 V |

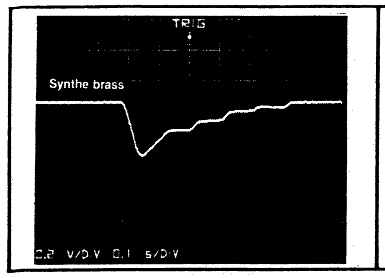
### ⓲ Envelope Control



- Accordion
- Harmonic Control...............Center
- Upper Key............................C4

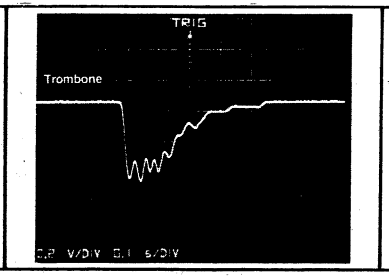
F

### ⓲ Envelope Control



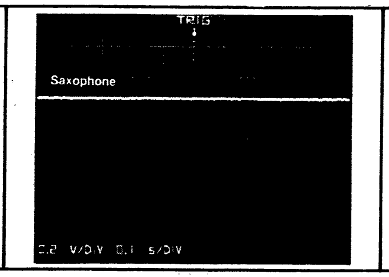
- Synthe Brass
- Harmonic Control...............Center
- Upper Key............................C4

### ⓲ Envelope Control



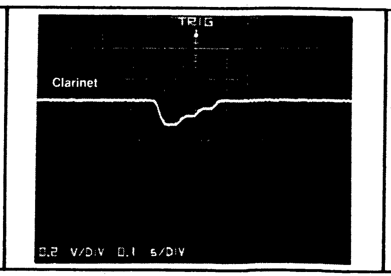
- Trombone
- Harmonic Control...............Center
- Upper Key............................C4

### ⓲ Envelope Control



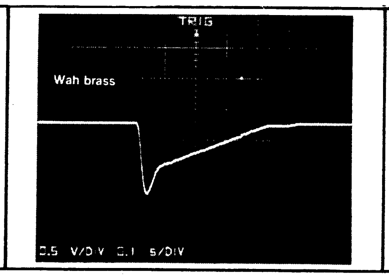
- Saxophone
- Harmonic Control...............Center
- Upper Key............................C4

### ⓲ Envelope Control



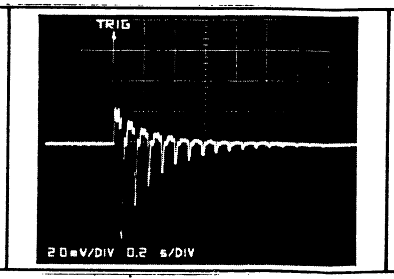
- Clarinet
- Harmonic Control...............Center
- Upper Key............................C4

### ⓲ Envelop Control



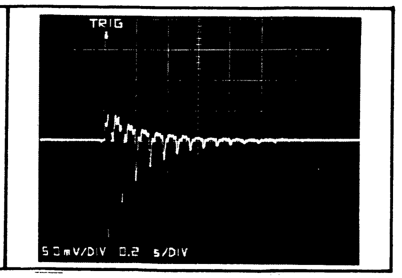
- Wah brass
- Harmonic Control...............Center
- Upper Key............................C4

### ⓳ Percussive Presets



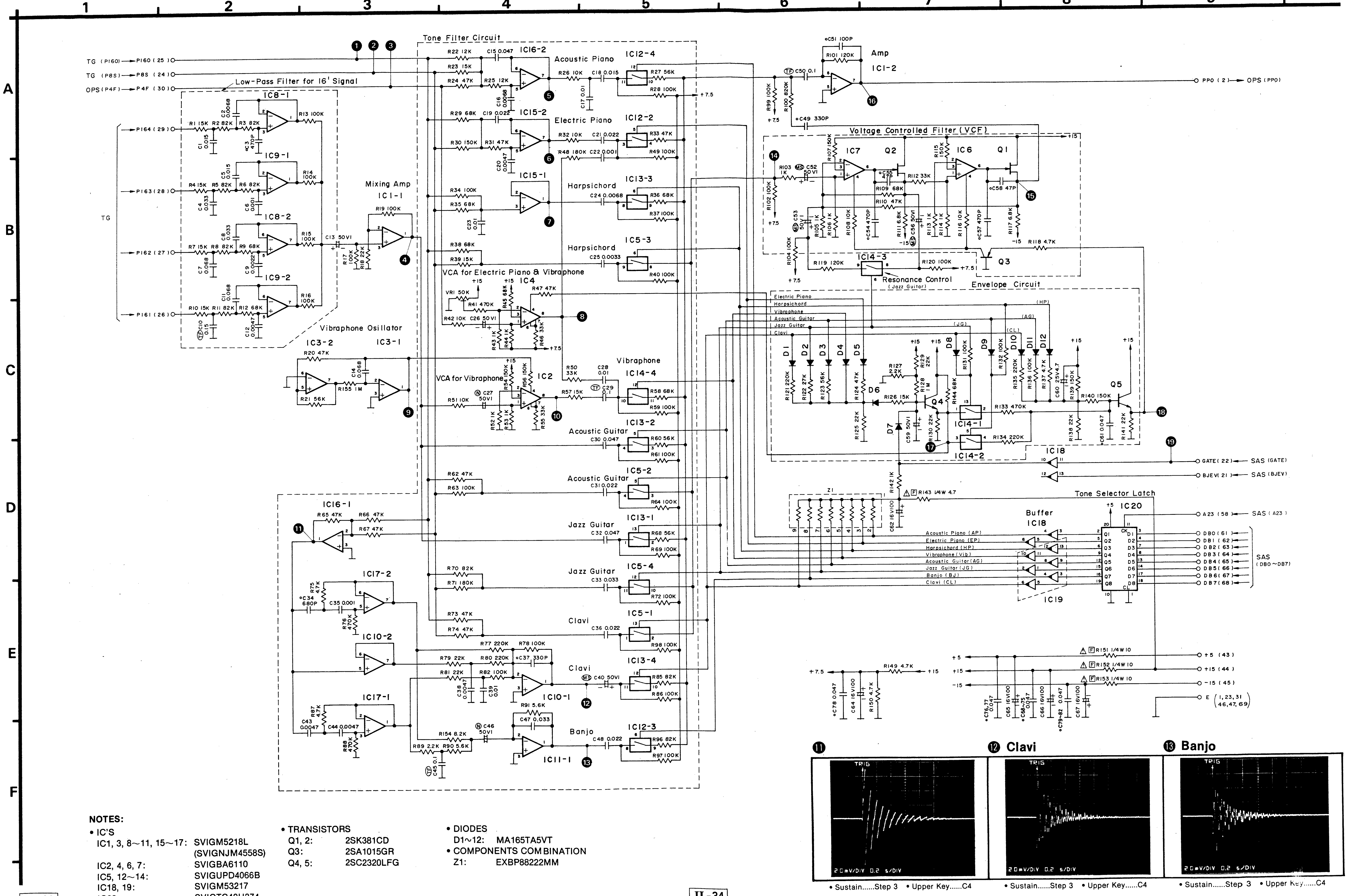
- Acoustic Piano
- Upper Key............................C4
- Sustain................................Step 3

### ㉑ Percussive Presets



- Acoustic Piano
- Harmonic Control...............Center
- Upper Key............................C4

# PERCUSSIVE PRESETS CIRCUIT DIAGRAM (PPS)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
TG (P160) → P160 (25)
TG (P8S) → P8S (24)
OPS (P4F) → P4F (30)
Low-Pass Filter for 16' Signal
P164 (29)
P163 (28)
P162 (27)
P161 (26)
TG
IC8-1
IC9-1
IC8-2
IC9-2
Mixing Amp
IC1-1
Vibraphone Osillator
IC3-2
IC3-1
Tone Filter Circuit
IC16-2
Acoustic Piano
IC12-4
IC15-2
Electric Piano
IC12-2
IC15-1
Harpsichord
IC13-3
Harpsichord
IC5-3
VCA for Electric Piano & Vibraphone
IC4
VCA for Vibraphone
IC2
Vibraphone
IC14-4
Acoustic Guitar
IC13-2
Acoustic Guitar
IC5-2
Jazz Guitar
IC13-1
Jazz Guitar
IC5-4
Clavi
IC5-1
Clavi
IC13-4
IC10-1
Banjo
IC12-3
IC11-1
IC16-1
IC17-2
IC10-2
IC17-1
+7.5
Amp
IC1-2
PPO (2) → OPS (PPO)
Voltage Controlled Filter (VCF)
IC7
Q2
IC6
Q1
Q3
IC14-3
Resonance Control
(Jazz Guitar)
Envelope Circuit
Electric Piano
Harpsichord
Vibraphone
Acoustic Guitar
Jazz Guitar
Clavi
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
Q4
Q5
IC14-1
IC14-2
IC18
GATE (22) ← SAS (GATE)
BJEV (21) ← SAS (BJEV)
Z1
Tone Selector Latch
IC20
Buffer
IC18
IC19
Acoustic Piano (AP)
Electric Piano (EP)
Harpsichord (HP)
Vibraphone (Vib)
Acoustic Guitar (AG)
Jazz Guitar (JG)
Banjo (BJ)
Clavi (CL)
A23 (58) ← SAS (A23)
DB0 (61)
DB1 (62)
DB2 (63)
DB3 (64)
DB4 (65)
DB5 (66)
DB6 (67)
DB7 (68)
SAS (DB0~DB7)
+5 (43)
+15 (44)
−15 (45)
E (1, 23, 31, 46, 47, 69)
R151 1/4W 10
R152 1/4W 10
R153 1/4W 10
R143 1/4W 4.7
R149 4.7K
TRIG
20mV/DIV 0.2 s/DIV

⑪

• Sustain......Step 3 • Upper Key......C4

⑫ Clavi

• Sustain......Step 3 • Upper Key......C4

⑬ Banjo

• Sustain......Step 3 • Upper Key......C4

NOTES:

- IC'S

| | |
|---|---|
| IC1, 3, 8~11, 15~17: | SVIGM5218L<br>(SVIGNJM4558S) |
| IC2, 4, 6, 7: | SVIGBA6110 |
| IC5, 12~14: | SVIGUPD4066B |
| IC18, 19: | SVIGM53217 |
| IC20: | SVIGTC40H374 |

- TRANSISTORS

| | |
|---|---|
| Q1, 2: | 2SK381CD |
| Q3: | 2SA1015GR |
| Q4, 5: | 2SC2320LFG |

- DIODES

| | |
|---|---|
| D1~12: | MA165TA5VT |

- COMPONENTS COMBINATION

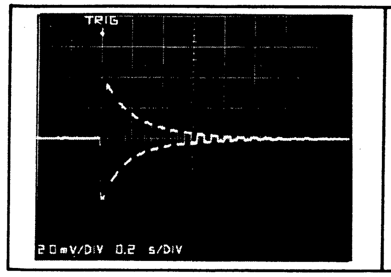
| | |
|---|---|
| Z1: | EXBP88222MM |

# PERCUSSIVE PRESETS CIRCUIT BOARD (PPS)

1 2 3 4 5 6 7 8 9

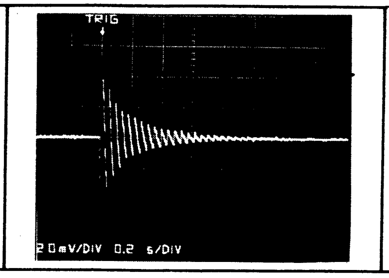
A B C D E F

❶



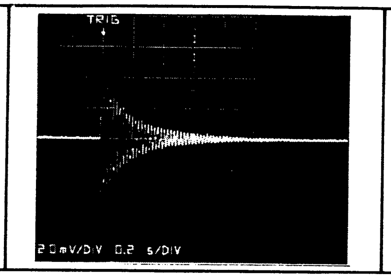
- Sustain.................................Step 3
- Upper Key............................C4

❷



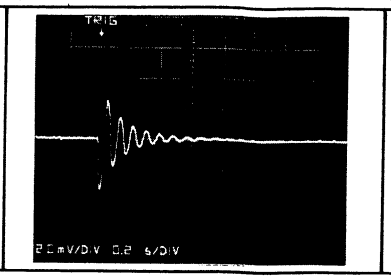
- Sustain.................................Step 3
- Upper Key............................C4

❸



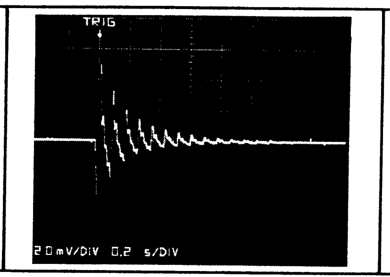
- Sustain.................................Step 3
- Upper Key............................C4

❹



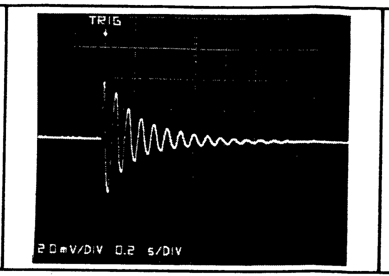
- Sustain.................................Step 3
- Upper Key............................C4

❺ Acoustic Piano



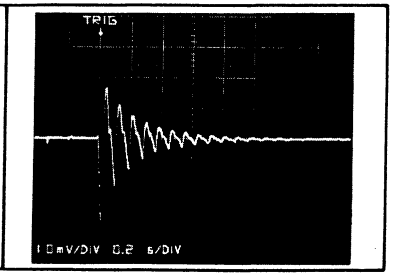
- Sustain.................................Step 3
- Upper Key............................C4

❻ Electric Piano



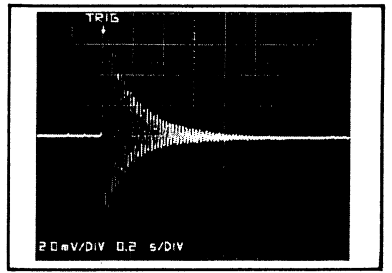
- Sustain.................................Step 3
- Upper Key............................C4

❼ Harpsichord



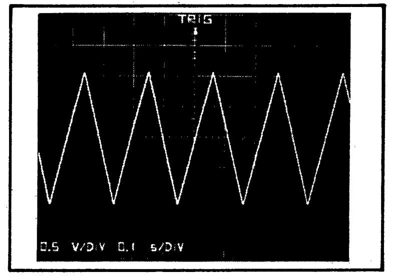
- Sustain.................................Step 3
- Upper Key............................C4

❽ Vibraphone

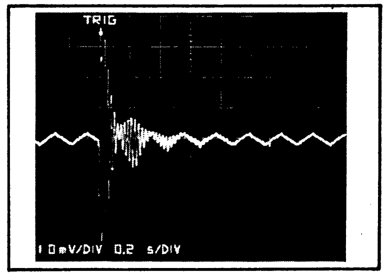


- Sustain.................................Step 3
- Upper Key............................C4

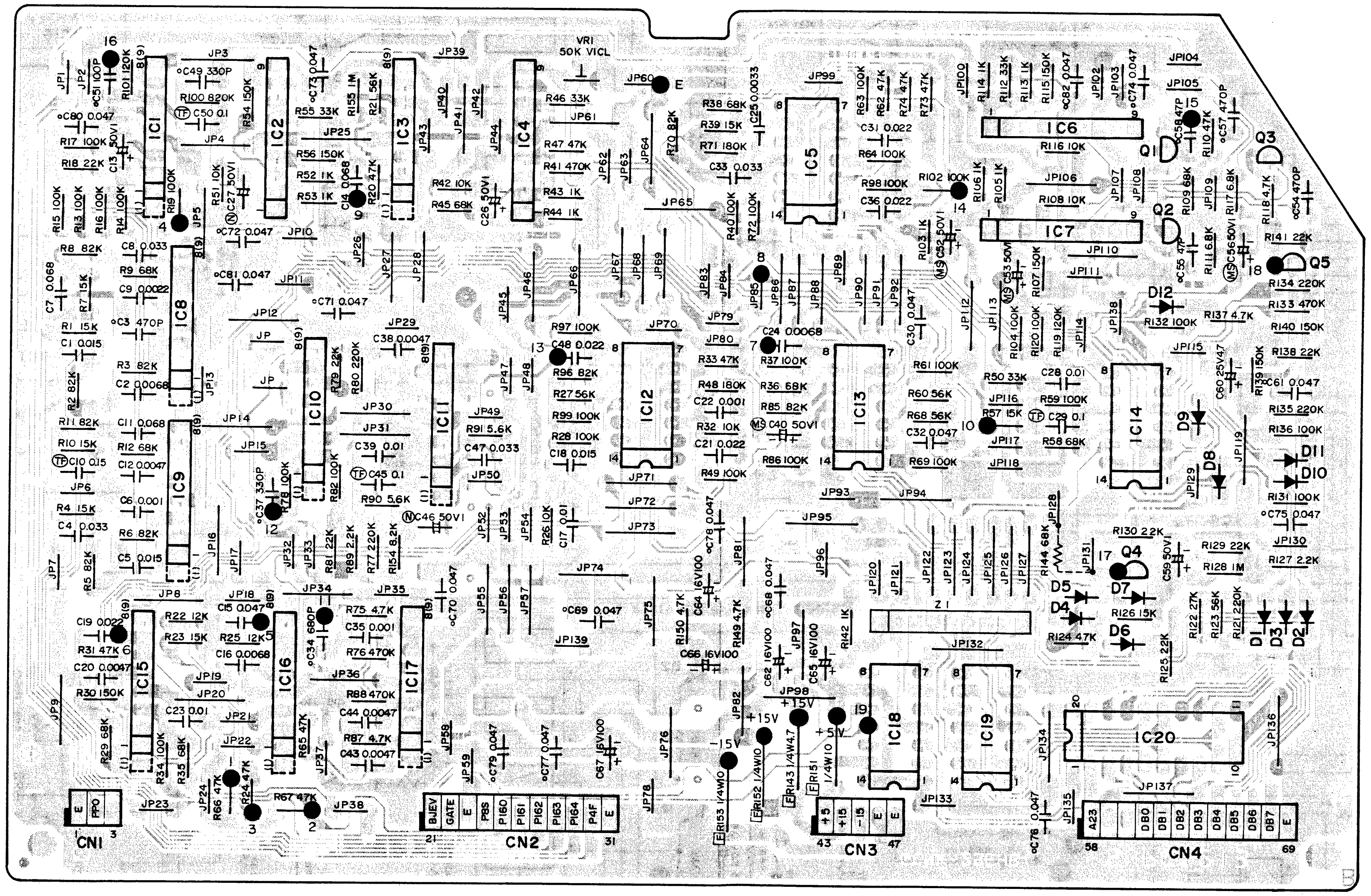
❾ Vibraphone OSC



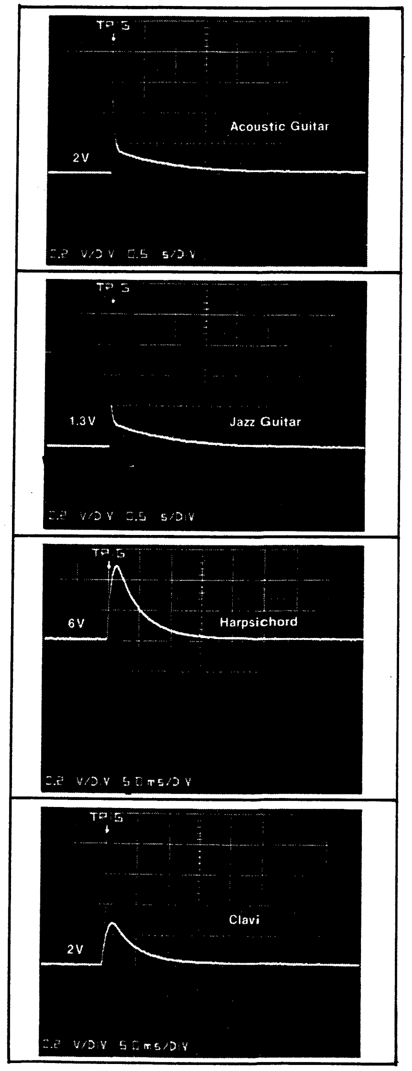
❿ Vibraphone



- Sustain.................................Step 3
- Upper Key............................C4


IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
Q1
Q2
Q3
Q4
Q5
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
VR1 50K VICL
Z1
CN1
CN2
CN3
CN4
+15V
-15V
+5V
E
BJEV
GATE
PBS
P160
P161
P162
P163
P164
P4F
A23
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7

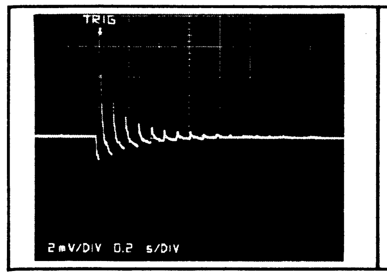
⓲ VCF Control



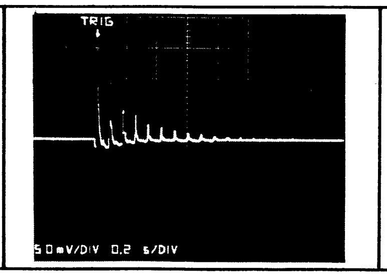
- Upper Key...........................on

SXPG12131

⓮

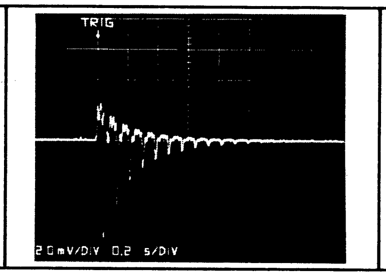


⓯



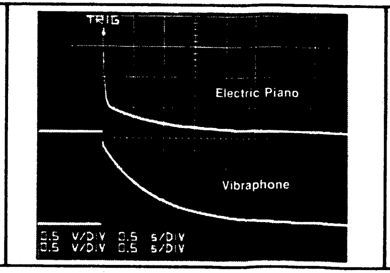
( • Percussive Presets.............Clavi
• Sustain......Step 3 • Upper Key......C4 )

⓰



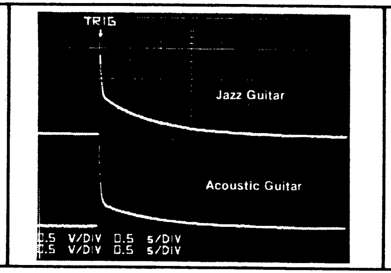
- Percussive Presets.........Acoustic Piano
- Sustain......Step 3 • Upper Key......C4

⓱ Envelope



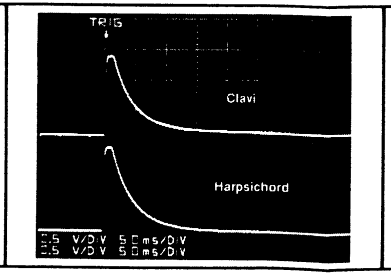
- Upper Key...........................on

⓱ Envelope



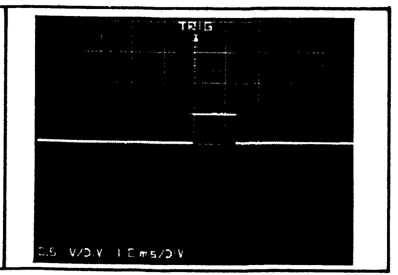
- Upper Key...........................on

⓱ Envelope



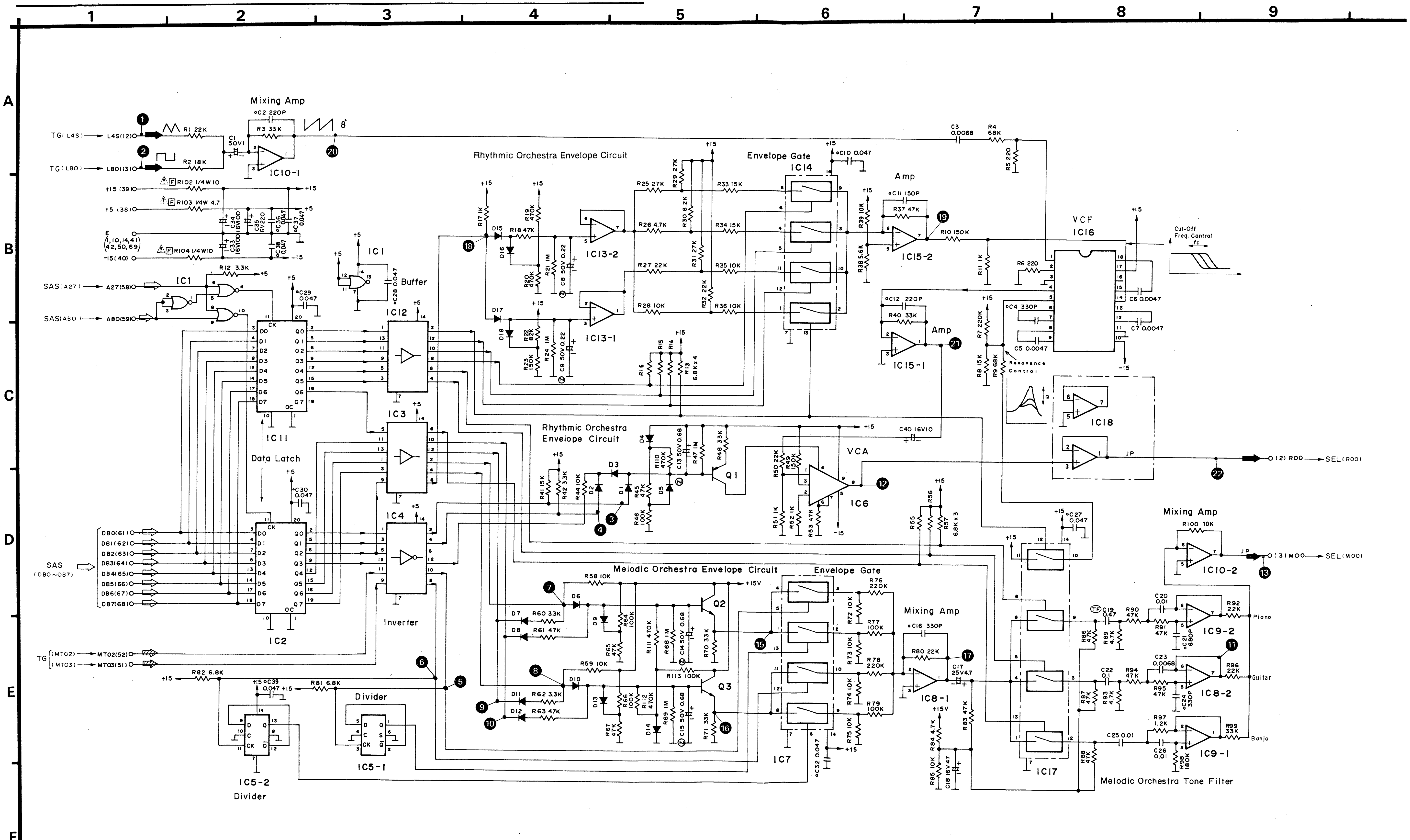
- Upper Key...........................on

⓳



- U. Percussive Presets.........on
- Upper Key...........................on

# ACCOMPANIMENT CIRCUIT DIAGRAM (ACC)


1 2 3 4 5 6 7 8 9
A B C D E F
Mixing Amp
IC10-1
TG(L4S)
L4S(12)
TG(L80)
L80(13)
+15 (39)
+5 (38)
-15(40)
SAS(A27)
A27(58)
SAS(A80)
A80(59)
IC1
Buffer
IC12
IC3
IC4
Inverter
IC11
Data Latch
IC2
SAS (DB0~DB7)
DB0(61)
DB1(62)
DB2(63)
DB3(64)
DB4(65)
DB5(66)
DB6(67)
DB7(68)
TG (MT02) MT02(52)
(MT03) MT03(51)
IC5-2
Divider
IC5-1
Divider
Rhythmic Orchestra Envelope Circuit
IC13-2
IC13-1
Envelope Gate
IC14
Amp
IC15-2
IC15-1
Amp
VCF
IC16
Cut-Off Freq. Control
fc
Resonance Control
Q
IC18
JP
(2) R00
SEL(R00)
Rhythmic Orchestra Envelope Circuit
Q1
VCA
IC6
Melodic Orchestra Envelope Circuit
Q2
Q3
Envelope Gate
IC7
Mixing Amp
IC8-1
IC17
Mixing Amp
IC10-2
(3) M00
SEL(M00)
IC9-2
Piano
IC8-2
Guitar
IC9-1
Banjo
Melodic Orchestra Tone Filter
TP

NOTES:

- IC'S

| | | | |
|---|---|---|---|
| IC1: | SVIGTC40H002 | IC6: | SVIGBA6110 |
| IC2, 11: | SVIGTC40H374 | IC7, 14, 17: | SVIGUPD4066B |
| IC3, 12: | SVIGM53217 | IC8~10, 13, 15, 18: | SVIGM5218L<br>(SVIGNJM4558S) |
| IC4: | SVIGM53216 | | |
| IC5: | SVIGTC4013BP | IC16: | SVIGBA6704 |

- TRANSISTORS

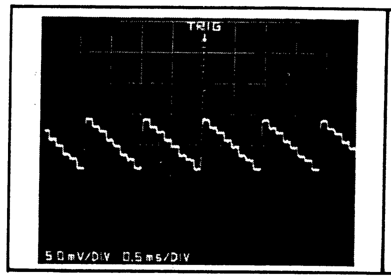
| | |
|---|---|
| Q1: | 2SA1015GR |
| Q2, 3: | 2SC2320LFG |

- DIODES

| | |
|---|---|
| D1~18: | MA165TA5VT |

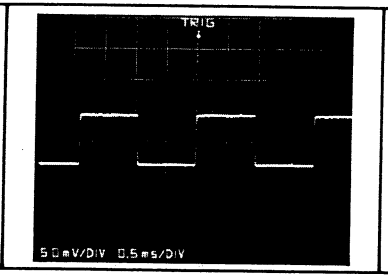
# ACCOMPANIMENT CIRCUIT BOARD (ACC)

**❶ Rhythmic Orchestra**



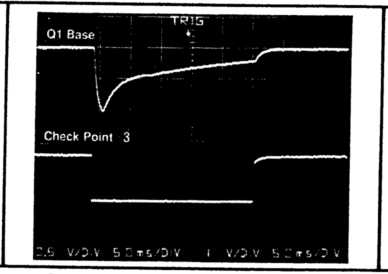
- Lower Key............................C4

**❷ Rhythmic Orchestra**



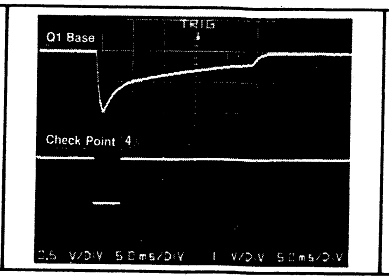
- Lower Key............................C4

**❸ Rhythmic Orchestra**



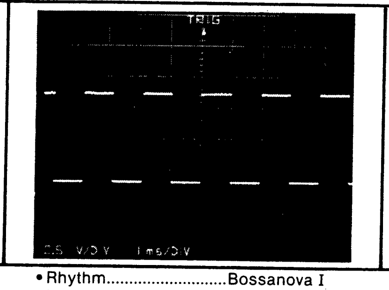
- Rhythm............................Bossanova I
- Lower Key......................C3

**❹ Rhythmic Orchestra**



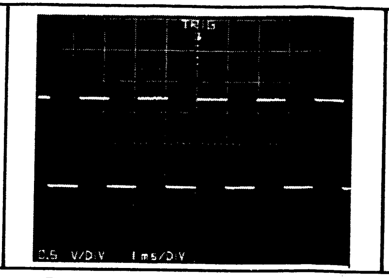
- Rhythm............................Bossanova I
- Lower Key......................C3

**❺ Melodic Orchestra**



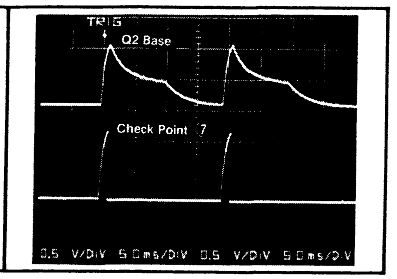
- Rhythm............................Bossanova I
- Lower Key......................C3

**❻ Melodic Orchestra**



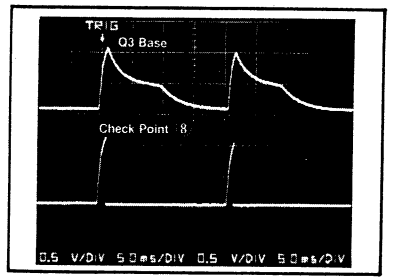
- Rhythm............................Bossanova I
- Lower Key......................C3

**❼ Melodic Orchestra**



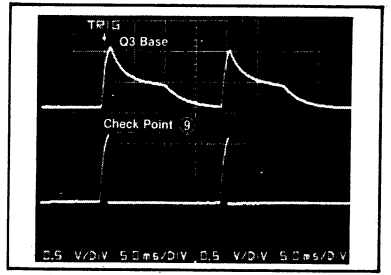
- Rhythm............................Bossanova I
- Lower Key......................C3 Key

**❽ Melodic Orchestra**



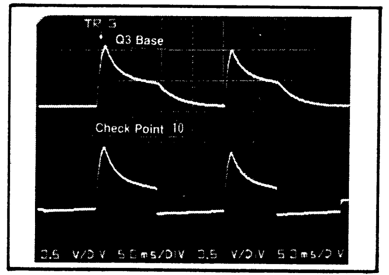
- Rhythm............................Bossanova I
- Lower Key......................C3

**❾ Melodic Orchestra**

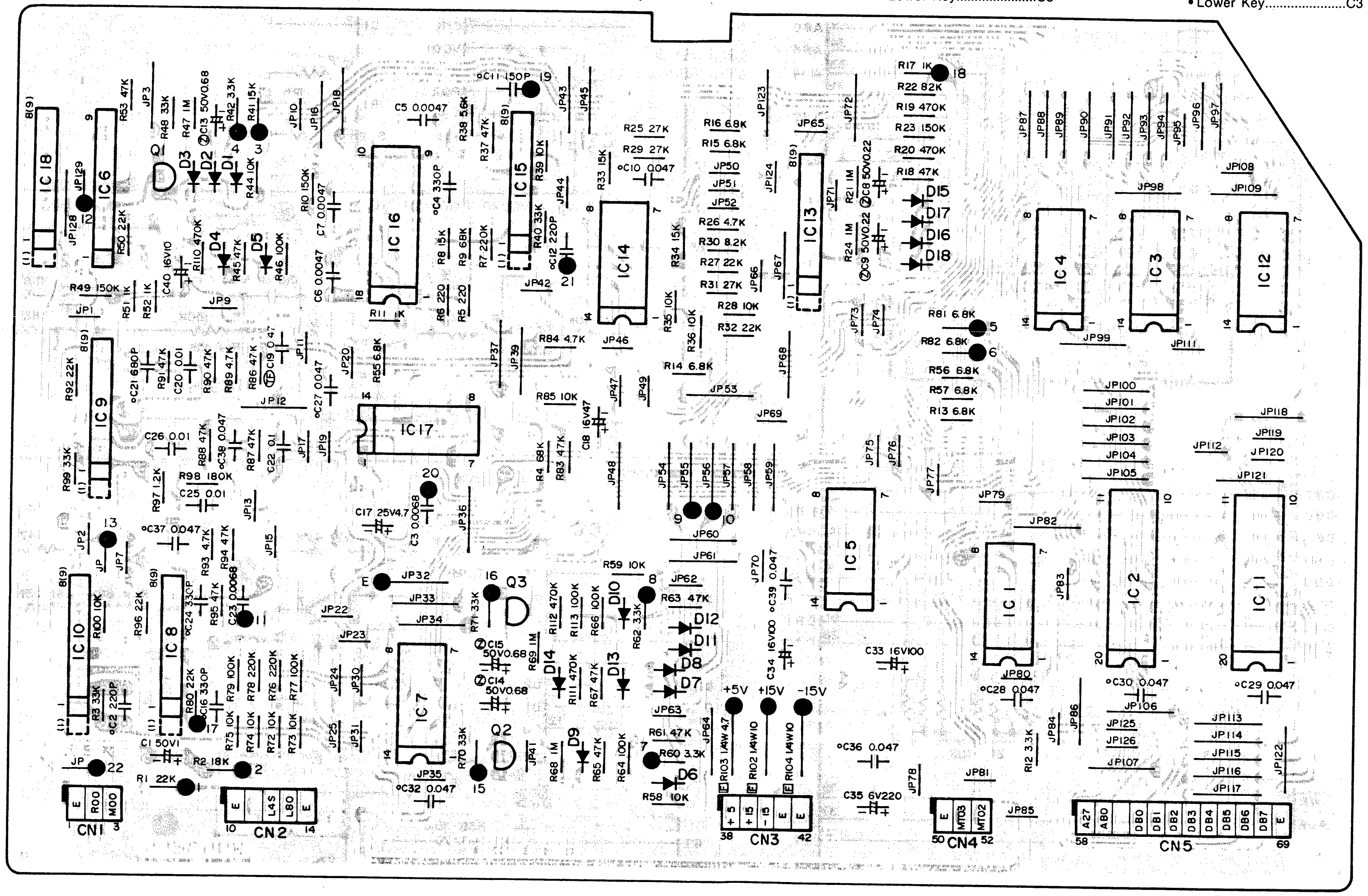


- Rhythm............................Bossanova I
- Lower Key......................C3

**❿ Melodic Orchestra**

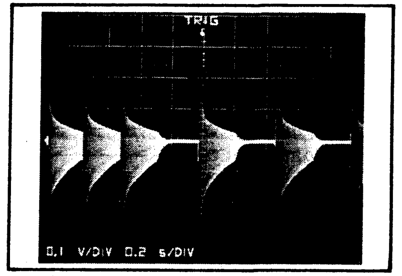


- Rhythm............................Bossanova I
- Lower Key......................C3



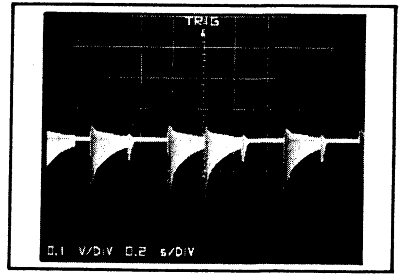
**SXPG11684**

**⓫ Melodic Orchestra**



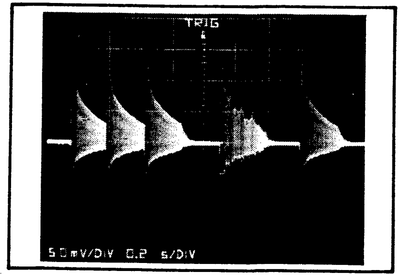
- Rhythm..................................Bossanova I
- Lower Key..........C3 • Melodic..........II

**⓬ Rhythmic Orchestra**



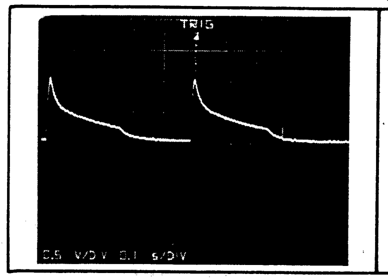
- Rhythm..................................Bossanova I
- Lower Key..........C3 • Rhythmic..........II

**⓭ Melodic Orchestra**



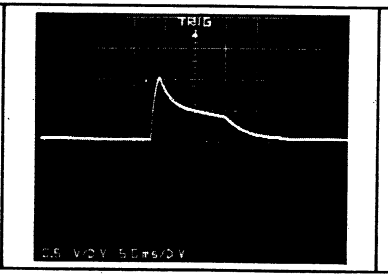
- Rhythm..................................Bossanova I
- Lower Key..........C3 • Melodic..........II

**⓯ Melodic Orchestra**



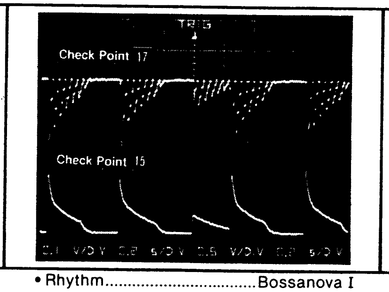
- Rhythm..................................Bossanova I
- Lower Key..........C3 • Melodic..........II

**⓰ Melodic Orchestra**



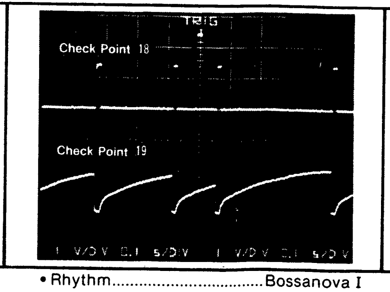
- Rhythm..................................Bossanova I
- Lower Key..........C3 • Melodic..........II

**⓱ Melodic Orchestra**



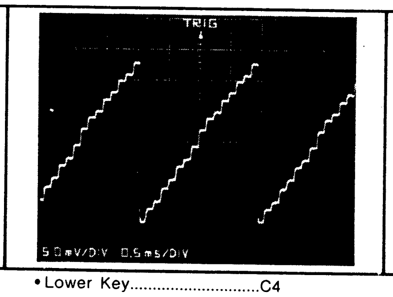
- Rhythm..................................Bossanova I
- Lower Key..........C4 • Melodic..........II

**⓲, ⓳ Rhythmic Orchestra**



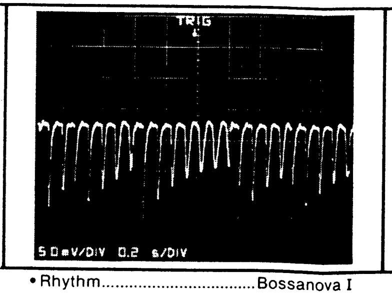
- Rhythm..................................Bossanova I
- Lower Key..........C3 • Rhythmic..........II

**⓴ Rhythmic Orchestra**



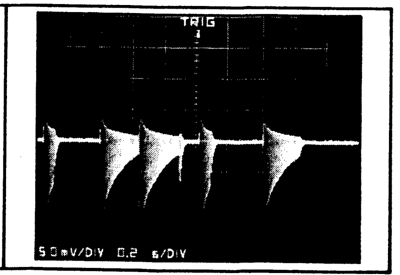
- Lower Key..................................C4

**㉑ Rhythmic Orchestra**



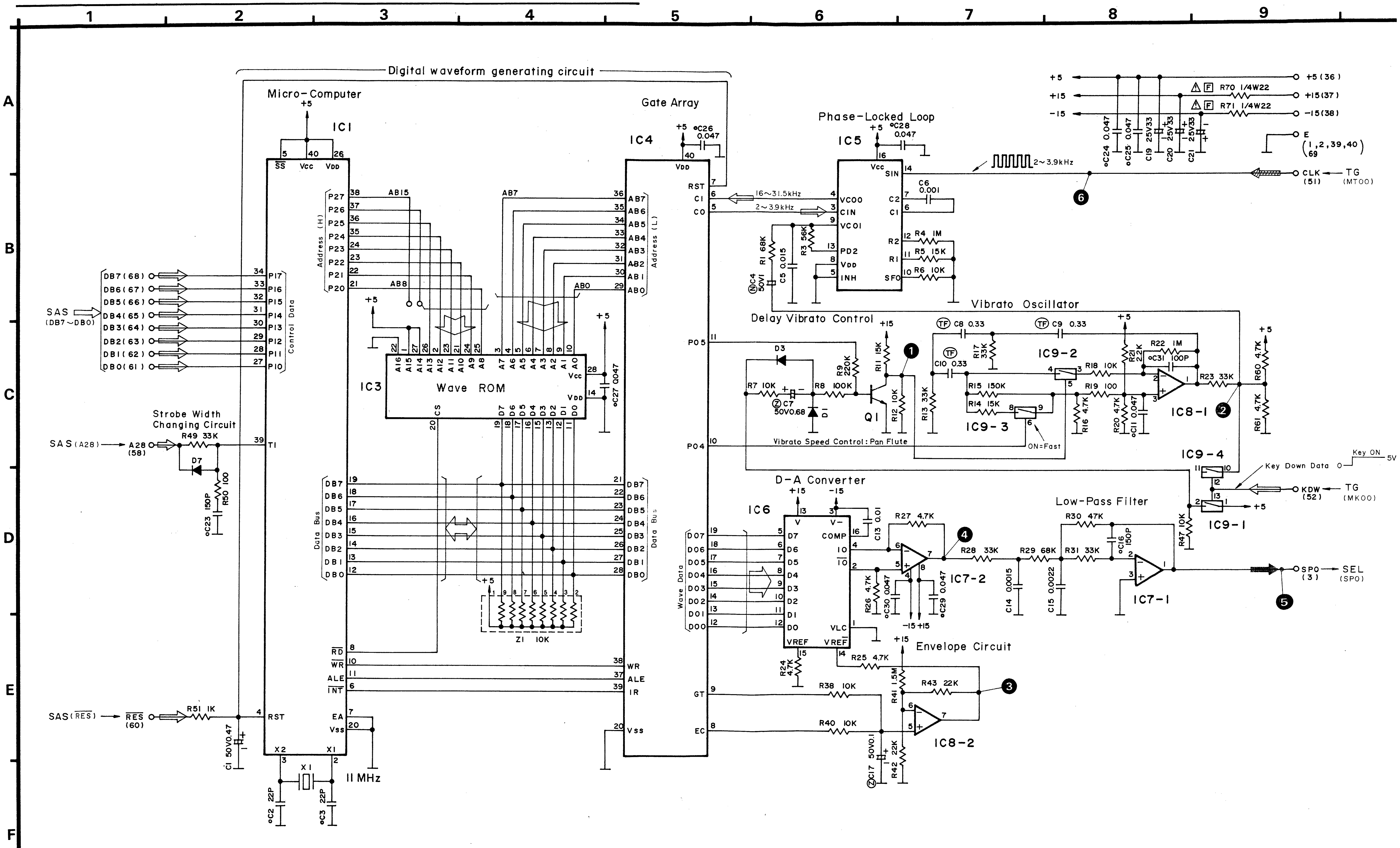
- Rhythm..................................Bossanova I
- Lower Key..........C3 • Melodic..........II

**㉒ Rhythmic Orchestra**



- Rhythm..................................Bossanova I
- Lower Key..........C3 • Melodic..........II

# SOLO SYNTHE PRESETS CIRCUIT DIAGRAM (SPS)


Digital waveform generating circuit
Micro-Computer
IC1
Gate Array
IC4
Wave ROM
IC3
Phase-Locked Loop
IC5
Delay Vibrato Control
Vibrato Oscillator
IC9-2
IC9-3
IC8-1
IC9-4
IC9-1
D-A Converter
IC6
IC7-2
Low-Pass Filter
IC7-1
Envelope Circuit
IC8-2
Strobe Width Changing Circuit
SAS (DB7~DB0)
SAS (A28) → A28 (58)
SAS (RES) → RES (60)
Address (H)
Address (L)
Control Data
Data Bus
Wave Data
Z1 10K
X1
11 MHz
16~31.5kHz
2~3.9kHz
Vibrato Speed Control: Pan Flute
ON=Fast
Key Down Data
Key ON 5V
KDW (52) ← TG (MK00)
CLK (51) ← TG (MT00)
SPO (3) → SEL (SPO)
+5 (36)
+15 (37)
−15 (38)
E (1,2,39,40,69)
R70 1/4W22
R71 1/4W22
1
2
3
4
5
6

**NOTES:**

- IC'S

IC1: SVIGM8049569
IC3: SVIG23128196
IC4: SVIG65002019
IC5: SVIGHD14046B
IC6: SVIGUPC624C
IC7: AN6552F
IC8: SVIGNJM082D
IC9: SVIGUPD4066B

- TRANSISTOR

Q1: 2SC2320LFG

- DIODES

D1, 3, 7: MA165TA5VT

- COMPONENTS COMBINATION

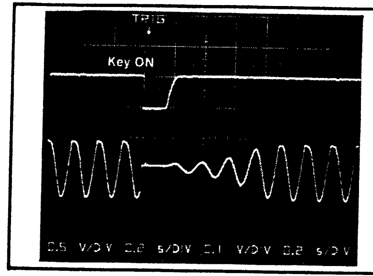
Z1: EXBP88103MM

- CERAMIC OSCILLATOR

X1: SVQGCSA110MT

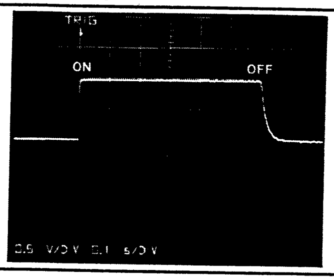
# SOLO SYNTHE PRESETS CIRCUIT BOARD (SPS)

**❶, ❷ Delay Vibrato**



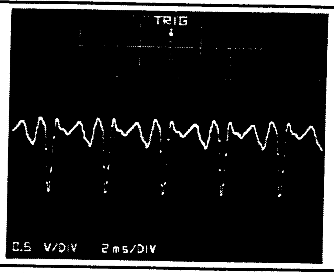
- Solo Synthe Presets ...........Trombone
- Upper Key............................C4

**❸ Envelope Control**



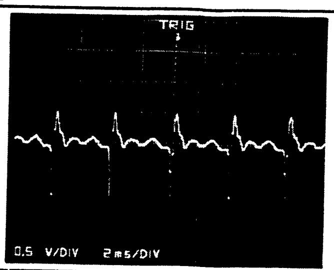
- Solo Synthe Presets ...........on
- Upper Key............................C4

**❹ Trumpet**



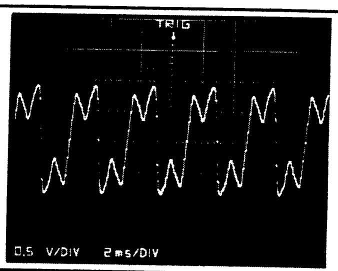
- Upper Key............................C4

**❹ Trombone**



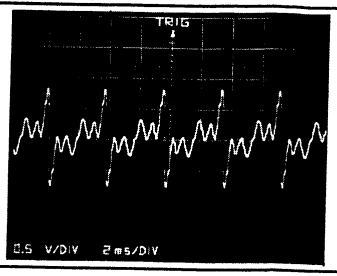
- Upper Key......................C4

**❹ Clarinet**



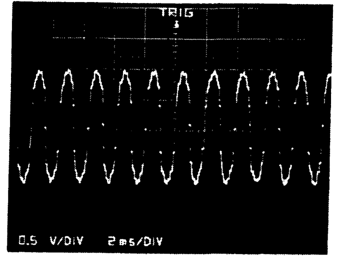
- Upper Key......................C4

**❹ Saxophone**

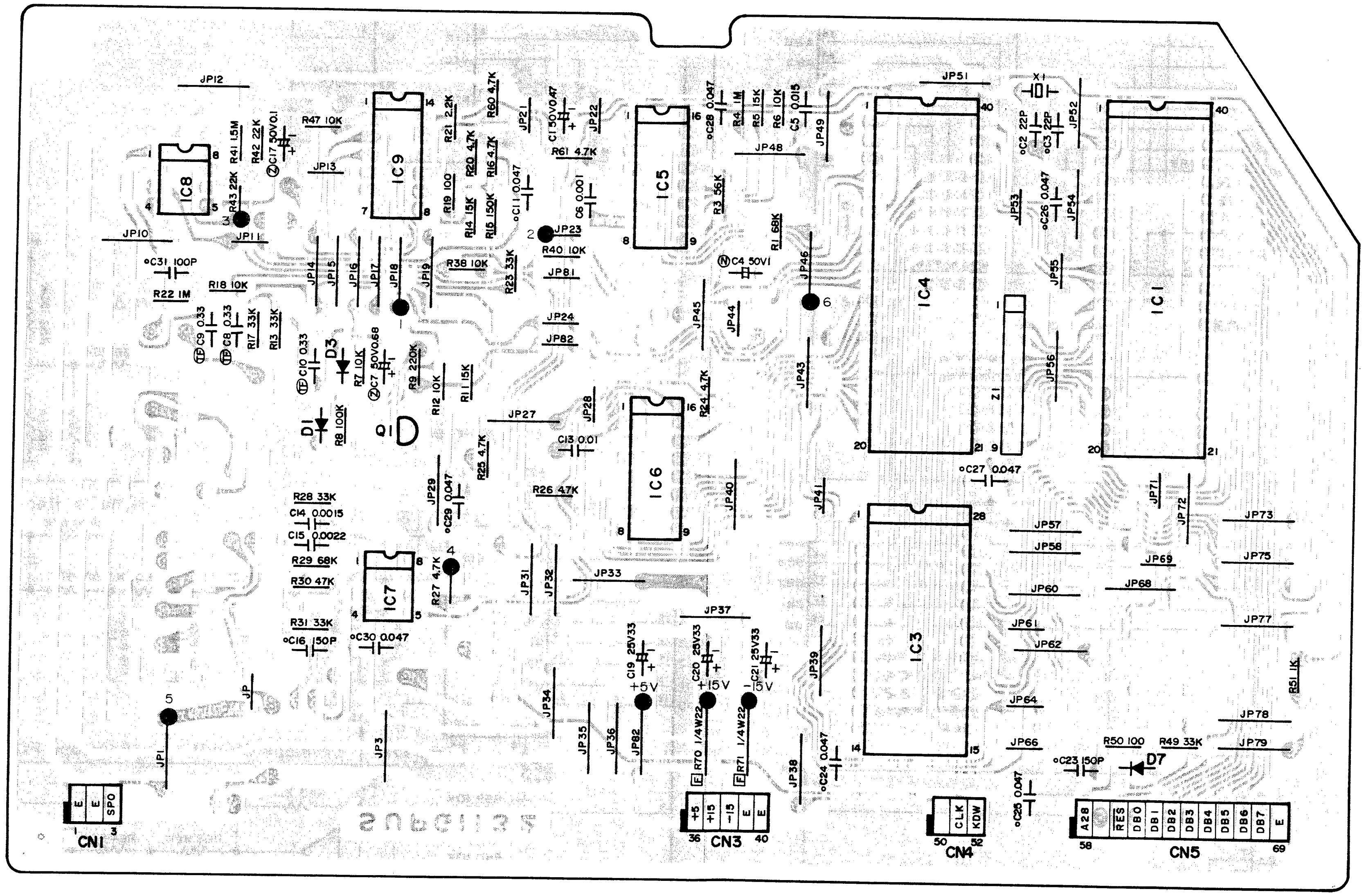


- Upper Key......................C4

**❹ Pan Flute**

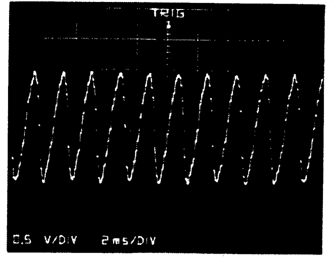


- Upper Key......................C4


IC1
IC3
IC4
IC5
IC6
IC7
IC8
IC9
Z1
X1
Q1
D1
D3
D7
1
2
3
4
5
6
+5V
+15V
-15V
CN1
E
E
SPO
CN3
+5
+15
-15
E
E
CN4
CLK
KDW
CN5
A28
RES
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
E

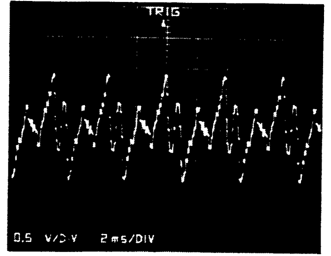
**SXPG11326**

**❹ Flute**



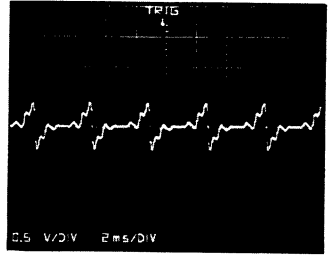
- Upper Key......................C4

**❹ Cosmic**



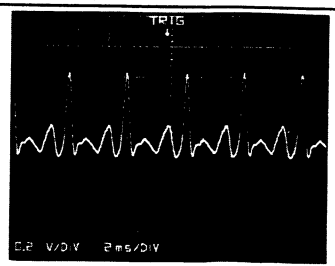
- Upper Key......................C4

**❹ Synthe Chopper**



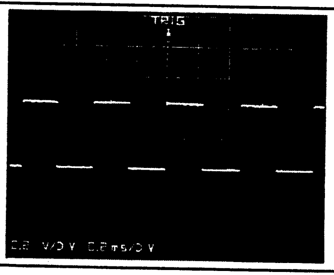
- Upper Key......................C4

**❺ Trumpet**



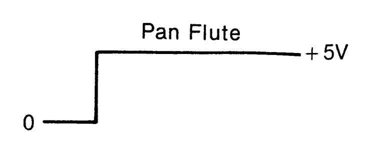
- Solo Synthe Presets ...........Trumpet
- Upper Key............................C4

**❻ Clock Signal**



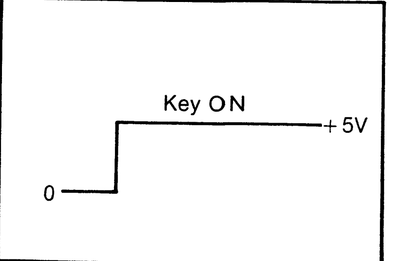
- 2.1kHz (B Key)~3.9kHz (C Key)

**IC9-3 Pin No. 6**



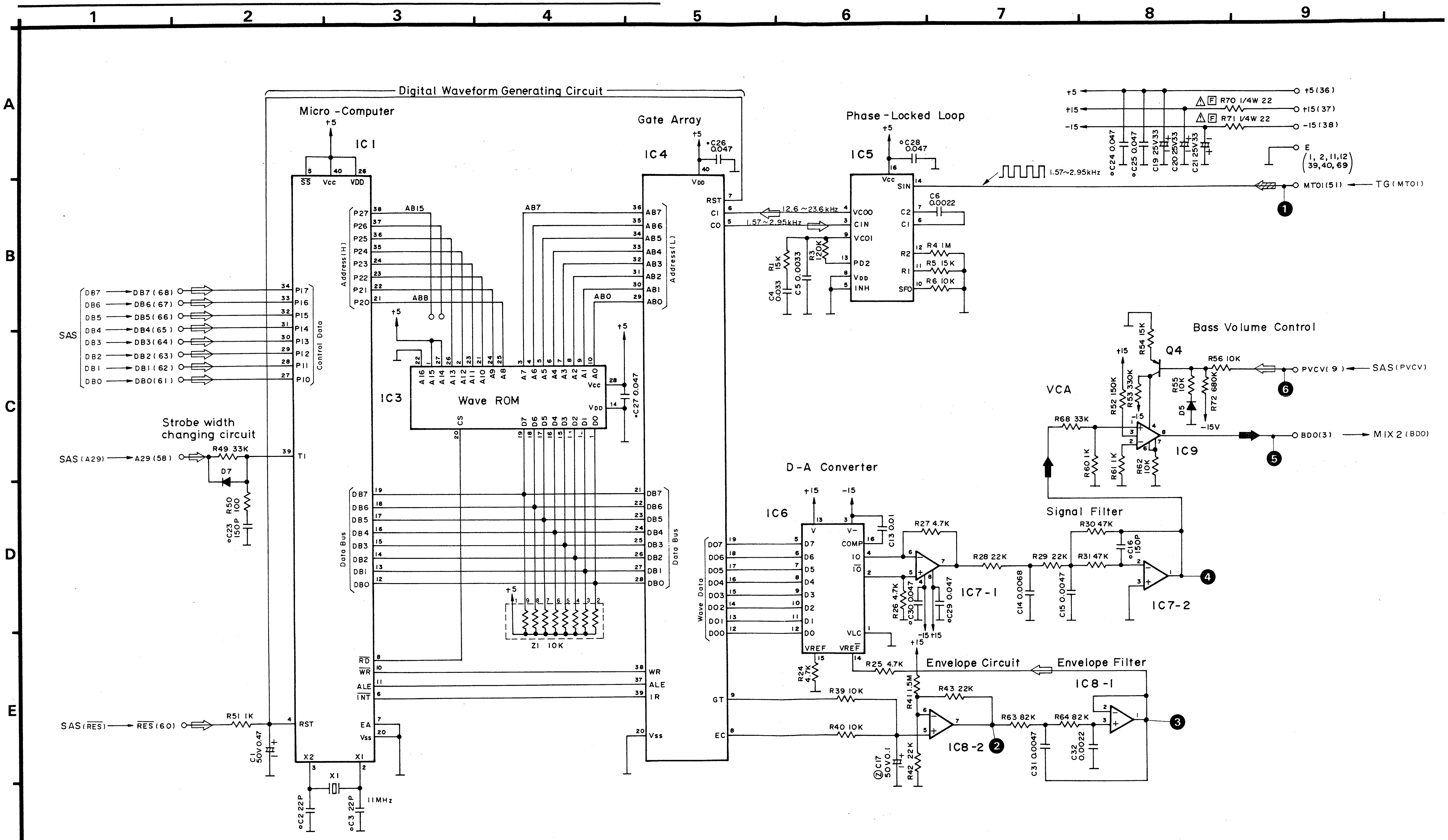
- Solo Synthe Presets ...........Pan Flute

**KDW Terminal**



- Solo Synthe Presets ..........on
- Upper Key...........................on

# BASS CIRCUIT DIAGRAM (BAS)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
Digital Waveform Generating Circuit
Micro-Computer
IC1
+5
SS
Vcc
VDD
P27
P26
P25
P24
P23
P22
P21
P20
Address (H)
AB15
AB8
P17
P16
P15
P14
P13
P12
P11
P10
Control Data
SAS
DB7 DB7(68)
DB6 DB6(67)
DB5 DB5(66)
DB4 DB4(65)
DB3 DB3(64)
DB2 DB2(63)
DB1 DB1(62)
DB0 DB0(61)
Strobe width changing circuit
SAS(A29) A29(58)
R49 33K
D7
R50 100
C23 150P
T1
Data Bus
DB7
DB6
DB5
DB4
DB3
DB2
DB1
DB0
RD
WR
ALE
INT
EA
Vss
RST
X2
X1
SAS(RES) RES(60)
R51 1K
C1 50V0.47
X1
11MHz
C2 22P
C3 22P
IC3
Wave ROM
A16 A15 A14 A13 A12 A11 A10 A9 A8 A7 A6 A5 A4 A3 A2 A1 A0
Vcc
VDD
CS
D7 D6 D5 D4 D3 D2 D1 D0
C27 0.047
Z1 10K
Gate Array
IC4
C26 0.047
VDD
RST
C1
C0
AB7
AB6
AB5
AB4
AB3
AB2
AB1
AB0
Address (L)
AB7
AB0
WR
ALE
IR
Vss
GT
EC
Wave Data
DO7
DO6
DO5
DO4
DO3
DO2
DO1
DO0
12.6~23.6kHz
1.57~2.95kHz
Phase-Locked Loop
IC5
C28 0.047
Vcc
SIN
VCO0
CIN
VCO1
PD2
VDD
INH
C2
C1
R2
R1
SF0
C6 0.0022
R4 1M
R5 15K
R6 10K
R1 15K
R3 120K
C4 0.033
C5 0.0033
1.57~2.95kHz
+5
+15
-15
+5(36)
+15(37)
-15(38)
R70 1/4W 22
R71 1/4W 22
C24 0.047
C25 0.047
C19 25V33
C20 25V33
C21 25V33
E
(1, 2, 11, 12 39, 40, 69)
MT01(51)
TG(MT01)
1
Bass Volume Control
Q4
R54 15K
R56 10K
PVCV(9)
SAS(PVCV)
6
R55 10K
D5
R72 680K
-15V
VCA
R52 150K
R53 330K
R68 33K
R60 1K
R61 1K
R62 10K
IC9
BD0(3)
MIX2(BD0)
5
D-A Converter
IC6
+15
-15
V
V-
COMP
IO
IO
D7 D6 D5 D4 D3 D2 D1 D0
VLC
VREF
VREF
C13 0.01
R27 4.7K
R26 4.7K
C30 0.047
C29 0.047
IC7-1
R28 22K
C14 0.0068
Signal Filter
R29 22K
R30 47K
R31 47K
C16 150P
C15 0.0047
IC7-2
4
R24 4.7K
R25 4.7K
Envelope Circuit
Envelope Filter
IC8-1
R39 10K
R40 10K
R41 1.5M
R43 22K
R42 22K
C17 50V0.1
IC8-2
2
R63 82K
R64 82K
C31 0.0047
C32 0.0022
3

NOTES:
- IC'S

IC1: SVIGM8049569
IC3: SVIG2364096
IC4: SVIG65002019
IC5: SVIGHD14046B
IC6: SVIGUPC624C
IC7: SVIGM5218L
IC8: SVIGNJM082D
IC9: SVIGBA6110

- TRANSISTOR

Q4: 2SA1015GR

- DIODES

D5, 7: MA165TA5VT

- COMPONENTS COMBINATION

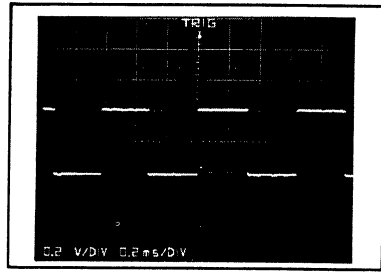
Z1: EXBP88103MM

- CERAMIC OSCILLATOR

X1: SVQGCSA110MT

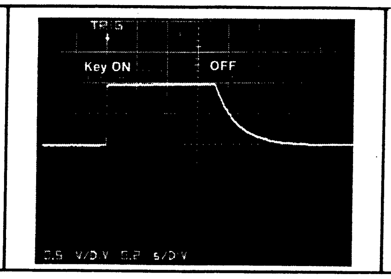
# BASS CIRCUIT BOARD (BAS)

### ❶ Clock Signal



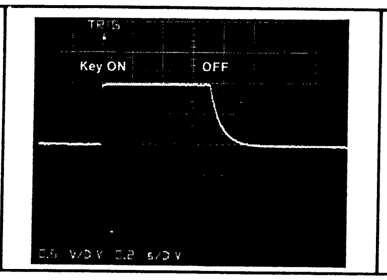
- 1.57 kHz (C Key)~2.96 kHz (B Key)

### ❷, ❸ Envelope Control



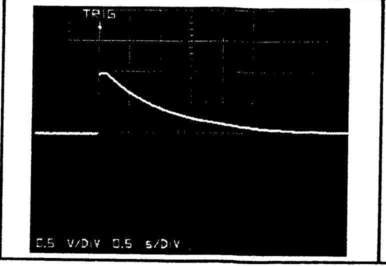
- Bass 8′ • Bass 16′ • Synthe Bass
- Sustain................................Step 3

### ❷, ❸ Envelope Control



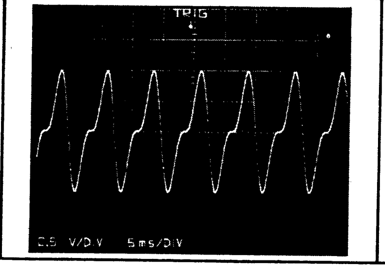
- Tuba
- Sustain................................Step 3

### ❷, ❸ Envelope Control



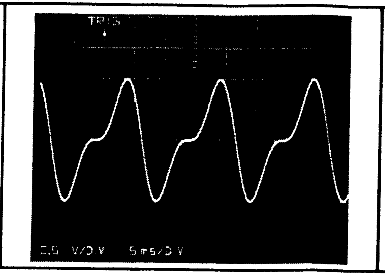
- Electric Bass • Acoustic Bass
- Sustain................................Step 3

### ❹ Bass 8′



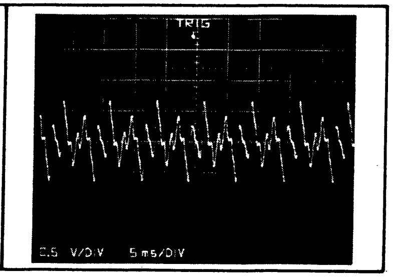
- Pedal Key ............................C2

### ❹ Bass 16′

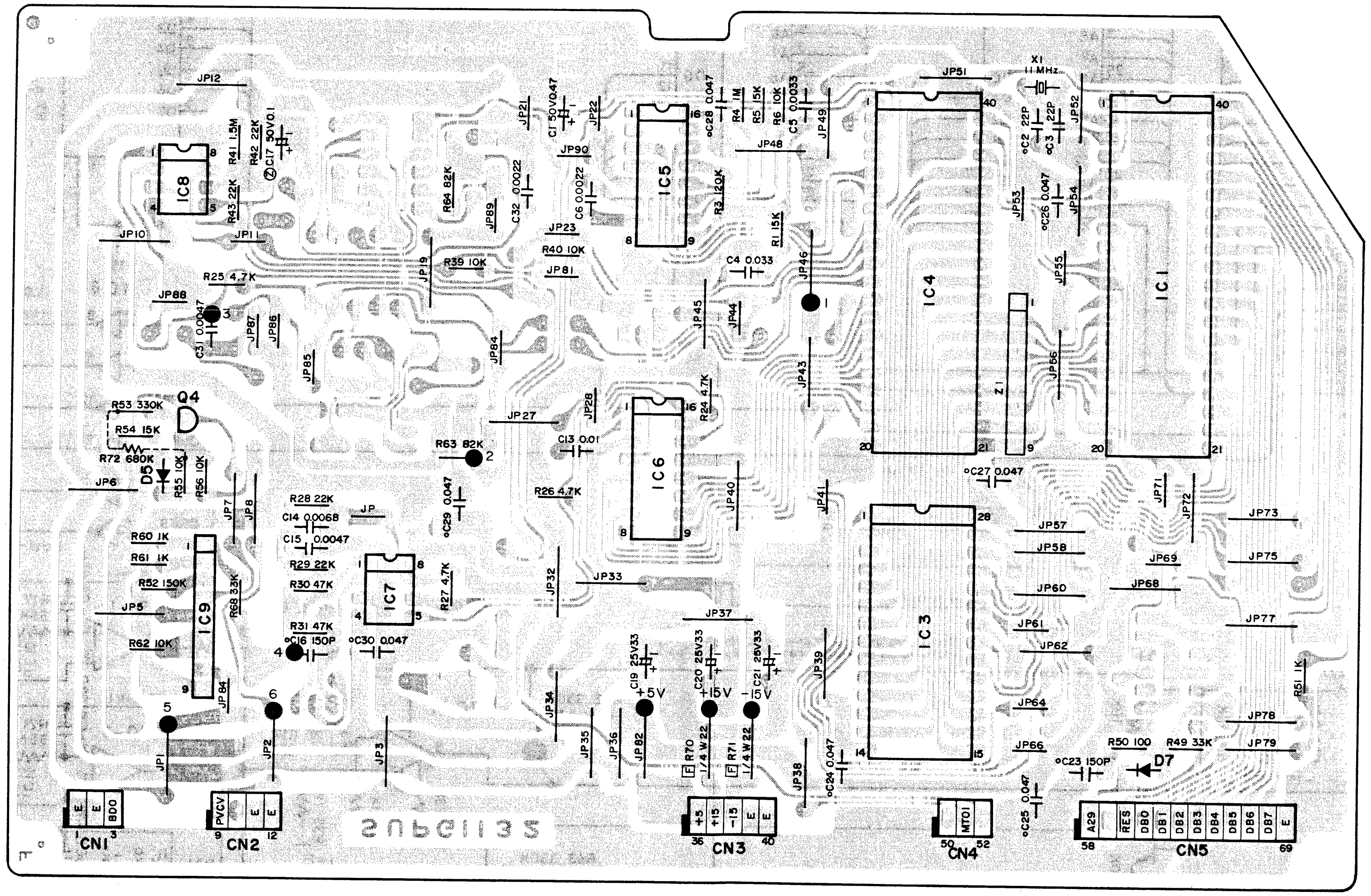


- Pedal Key ............................C2

### ❹ Tuba

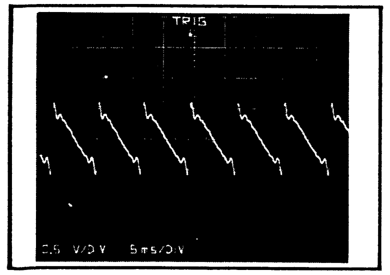


- Pedal Key ............................C2


IC1
IC3
IC4
IC5
IC6
IC7
IC8
IC9
Q4
D5
D7
Z1
X1 11MHz
R41 1.5M
R42 22K
R43 22K
C17 50V0.1
C31 0.0047
R25 4.7K
R64 82K
C32 0.0022
R39 10K
C1 50V0.47
C6 0.0022
R40 10K
C28 0.047
R4 1M
R5 15K
R6 10K
C5 0.0033
R3 120K
R1 15K
C4 0.033
C2 22P
C3 22P
C26 0.047
R53 330K
R54 15K
R72 680K
R55 10K
R56 10K
R63 82K
R28 22K
C14 0.0068
C15 0.0047
R29 22K
R30 47K
R31 47K
C16 150P
C30 0.047
C29 0.047
R27 4.7K
C13 0.01
R24 4.7K
R26 4.7K
R60 1K
R61 1K
R52 150K
R68 33K
R62 10K
C19 25V33
C20 25V33
C21 25V33
+5V
+15V
-15V
R70 1/4W22
R71 1/4W22
C24 0.047
C25 0.047
C27 0.047
C23 150P
R50 100
R49 33K
R51 1K
JP1
JP2
JP3
JP5
JP6
JP7
JP8
JP10
JP11
JP12
JP19
JP21
JP22
JP23
JP27
JP28
JP32
JP33
JP34
JP35
JP36
JP37
JP38
JP39
JP40
JP41
JP43
JP44
JP45
JP46
JP48
JP49
JP51
JP52
JP53
JP54
JP55
JP56
JP57
JP58
JP60
JP61
JP62
JP64
JP66
JP68
JP69
JP71
JP72
JP73
JP75
JP77
JP78
JP79
JP81
JP82
JP84
JP85
JP86
JP87
JP88
JP89
JP90
1
2
3
4
5
6
E E 800
CN1
PVCV E E
CN2
+5 +15 -15 E E
CN3
MT01
CN4
A29 RES DB0 DB1 DB2 DB3 DB4 DB5 DB6 DB7 E
CN5

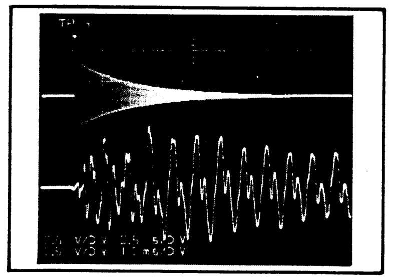
**SXPG113281**

### ❹ Synthe Bass



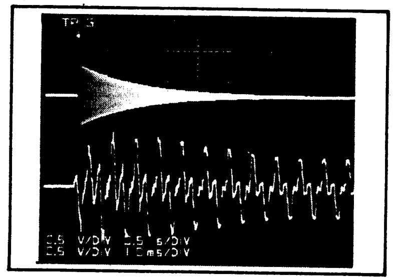
- Pedal Key ............................C2

### ❹ Electric Bass



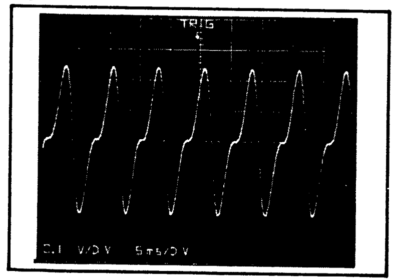
- Pedal Key ............................C2

### ❹ Acoustic Bass



- Pedal Key ............................C2

### ❹ Bass 8′



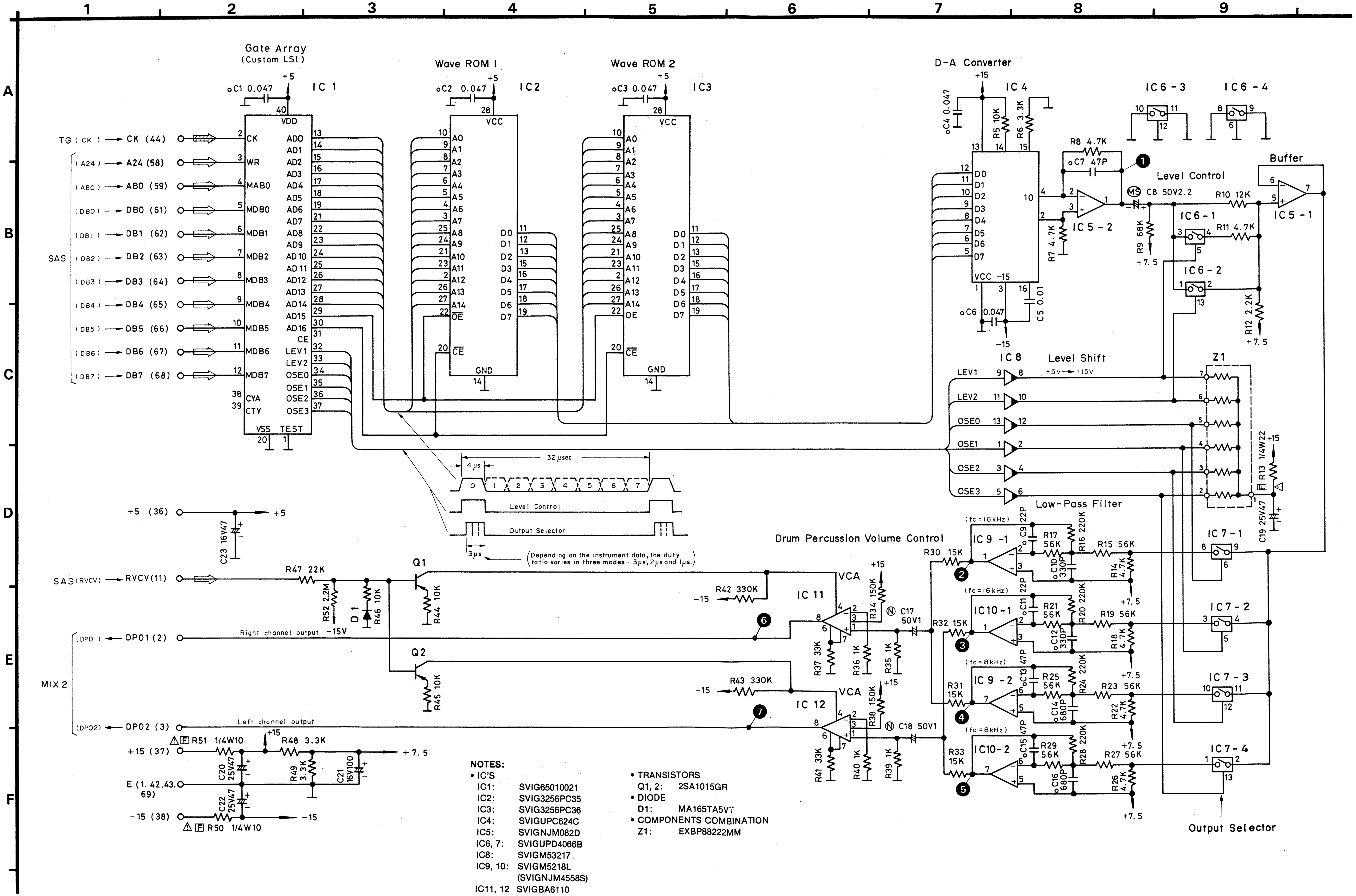
- Pedal Key......C2 • Pedal Vol......max
- Main Vol, EXP......................max

### ❻ Bass Volume Control

| Bass Vol. | Bass 8′ | Bass 16′ Synthe Bass | Electric Bass Acoustic Bass Tuba |
|---|---|---|---|
| Step 1 | −1.9V | −2.2V | −2.7V |
| Step 2 | −3.1V | −3.6V | −4.6V |
| Step 3 | −5.1V | −6.0V | −7.5V |
| Step 4 | −8.7V | −10.2V | −12.8V |

- Main Volume.......................max • Expression Pedal ...............max

# DRUM PERCUSSION CIRCUIT DIAGRAM (DP)



1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
Gate Array (Custom LSI)
IC1
Wave ROM I
IC2
Wave ROM 2
IC3
D-A Converter
IC4
IC6-3
IC6-4
Level Control
Buffer
IC5-1
IC5-2
IC6-1
IC6-2
IC8
Level Shift
+5V → +15V
Z1
Low-Pass Filter
Drum Percussion Volume Control
IC9-1
IC10-1
IC9-2
IC10-2
IC7-1
IC7-2
IC7-3
IC7-4
Output Selector
IC11
IC12
VCA
Q1
Q2
D1
TG (CK) → CK (44)
SAS
(A24) → A24 (58)
(AB0) → AB0 (59)
(DB0) → DB0 (61)
(DB1) → DB1 (62)
(DB2) → DB2 (63)
(DB3) → DB3 (64)
(DB4) → DB4 (65)
(DB5) → DB5 (66)
(DB6) → DB6 (67)
(DB7) → DB7 (68)
+5 (36)
SAS(RVCV) → RVCV(11)
MIX 2
(DP01) ← DP01 (2)
(DP02) ← DP02 (3)
Right channel output
Left channel output
+15 (37)
E (1. 42. 43. 69)
−15 (38)
LEV1
LEV2
OSE0
OSE1
OSE2
OSE3
32μsec
4μs
3μs
Level Control
Output Selector
(Depending on the instrument data, the duty ratio varies in three modes : 3μs, 2μs and 1μs.)
(fc=16kHz)
(fc=8kHz)
C1 0.047
C2 0.047
C3 0.047
C4 0.047
C5 0.01
C6 0.047
C7 47P
C8 50V2.2
C9 22P
C10 330P
C11 22P
C12 330P
C13 47P
C14 680P
C15 47P
C16 680P
C17 50V1
C18 50V1
C19 25V47
C20 25V47
C21 16V100
C22 25V47
C23 16V47
R5 10K
R6 3.3K
R7 4.7K
R8 4.7K
R9 68K
R10 12K
R11 4.7K
R12 2.2K
R13 1/4W22
R14 4.7K
R15 56K
R16 220K
R17 56K
R18 4.7K
R19 56K
R20 220K
R21 56K
R22 4.7K
R23 56K
R24 220K
R25 56K
R26 4.7K
R27 56K
R28 220K
R29 56K
R30 15K
R31 15K
R32 15K
R33 15K
R34 150K
R35 1K
R36 1K
R37 33K
R38 150K
R39 1K
R40 1K
R41 33K
R42 330K
R43 330K
R44 10K
R45 10K
R46 10K
R47 22K
R48 3.3K
R49 3.3K
R50 1/4W10
R51 1/4W10
R52 2.2M
+7.5
+15
−15
+5

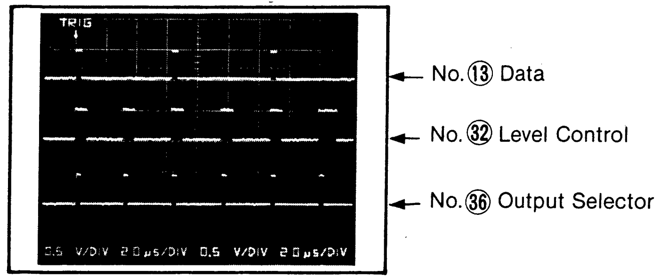
NOTES:
- IC'S

| | |
|---|---|
| IC1: | SVIG65010021 |
| IC2: | SVIG3256PC35 |
| IC3: | SVIG3256PC36 |
| IC4: | SVIGUPC624C |
| IC5: | SVIGNJM082D |
| IC6, 7: | SVIGUPD4066B |
| IC8: | SVIGM53217 |
| IC9, 10: | SVIGM5218L<br>(SVIGNJM4558S) |
| IC11, 12 | SVIGBA6110 |

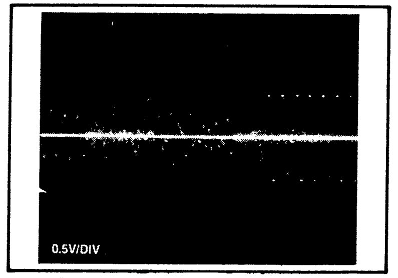
- TRANSISTORS
  - Q1, 2: 2SA1015GR
- DIODE
  - D1: MA165TA5VT
- COMPONENTS COMBINATION
  - Z1: EXBP88222MM

# DRUM PERCUSSION CIRCUIT BOARD (DP)

IC1— Pin No⑬, ㉜, ㊱

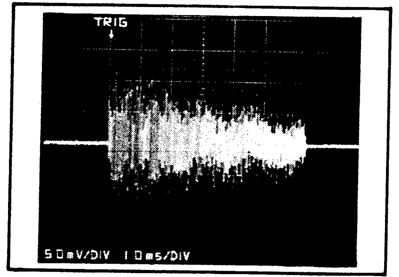


❶



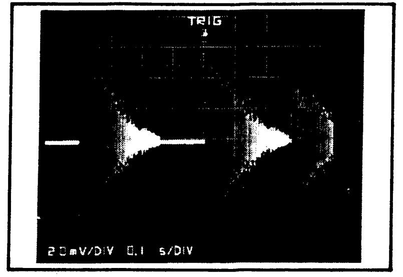
- Rhythm SW..........................Rumba
- Arrange Percussion............I

❷

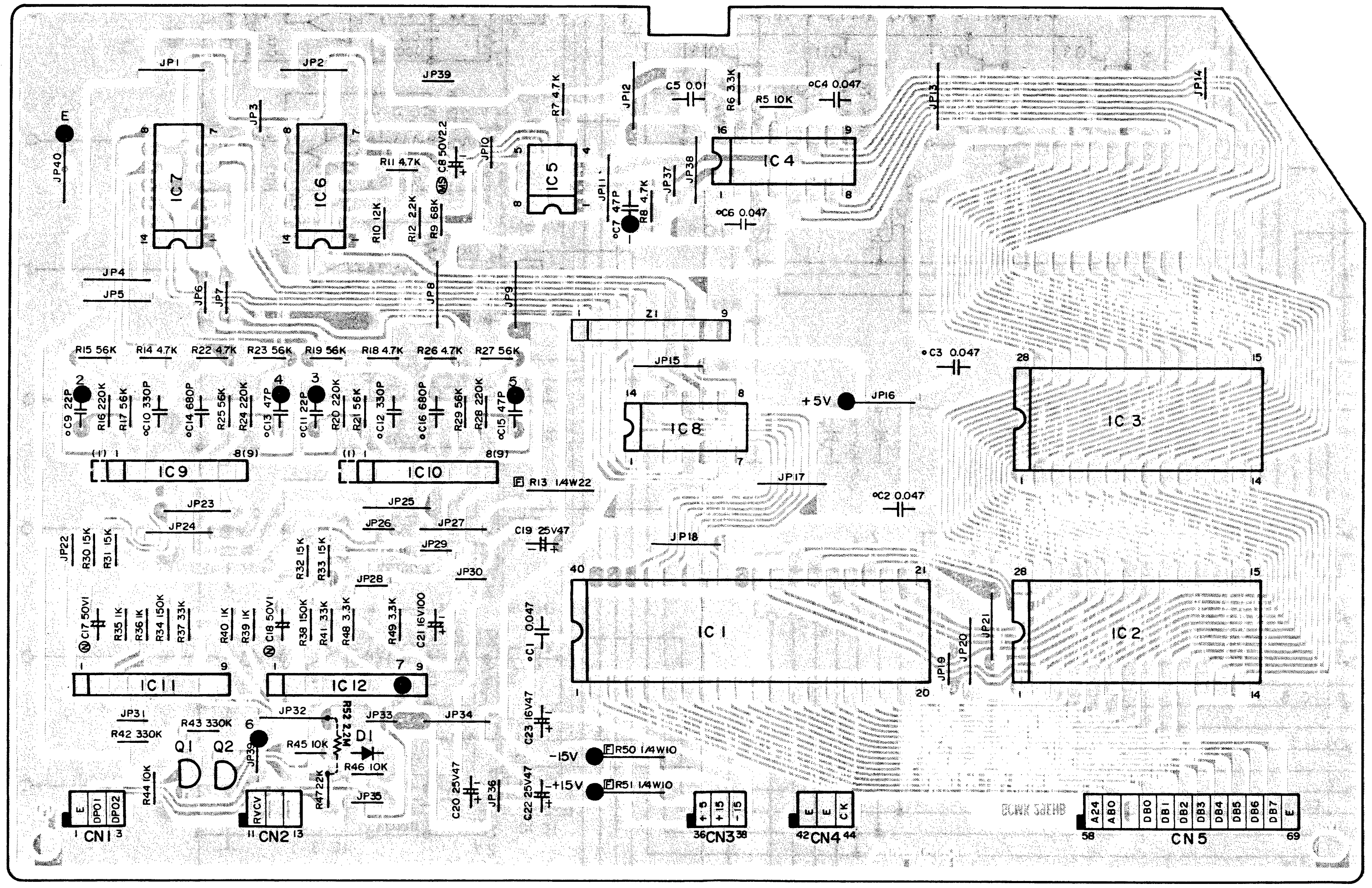


- Rhythm SW..........................Mambo
- Arrange Percussion............I

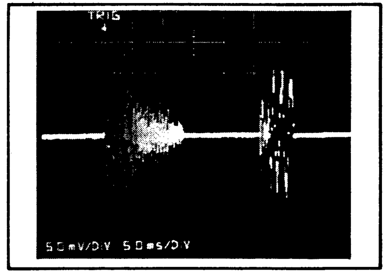
❸



- Rhythm SW..........................Swing II
- Arrange Percussion............I

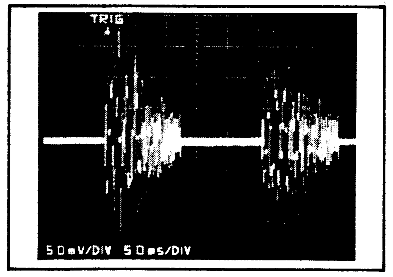

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
JP1
JP2
JP39
JP3
JP40
E
IC7
IC6
IC5
IC4
R11 4.7K
C8 50V2.2
R10 12K
R12 2.2K
R9 68K
JP10
R7 4.7K
JP12
C5 0.01
R6 3.3K
R5 10K
C4 0.047
JP13
JP14
JP11
C7 47P
R8 4.7K
JP37
JP38
C6 0.047
JP4
JP5
JP6
JP7
JP8
JP9
Z1
R15 56K
R14 4.7K
R22 4.7K
R23 56K
R19 56K
R18 4.7K
R26 4.7K
R27 56K
C9 22P
R16 220K
R17 56K
C10 330P
C14 680P
R25 56K
R24 220K
C13 47P
C11 22P
R20 220K
R21 56K
C12 330P
C16 680P
R29 56K
R28 220K
C15 47P
JP15
IC8
+5V
JP16
C3 0.047
IC3
IC9
IC10
R13 1/4W22
JP17
C2 0.047
JP23
JP24
JP25
JP26
JP27
JP29
C19 25V47
JP18
JP22
R30 15K
R31 15K
R32 15K
R33 15K
JP28
JP30
C17 50V1
R35 1K
R36 1K
R34 150K
R37 33K
R40 1K
R39 1K
C18 50V1
R38 150K
R41 33K
R48 3.3K
R49 3.3K
C21 16V100
C1 0.047
IC1
JP19
JP20
JP21
IC2
IC11
IC12
JP31
R42 330K
R43 330K
JP32
R52 2.2M
JP33
JP34
C23 16V47
Q1
Q2
R45 10K
D1
R46 10K
R44 10K
R47 22K
JP35
JP36
C20 25V47
C22 25V47
-15V
R50 1/4W10
+15V
R51 1/4W10
CN1
E
DP01
DP02
CN2
RVCV
CN3
+5
+15
-15
CN4
E
E
CK
CN5
A24
A80
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
E
SXPG12172

❹



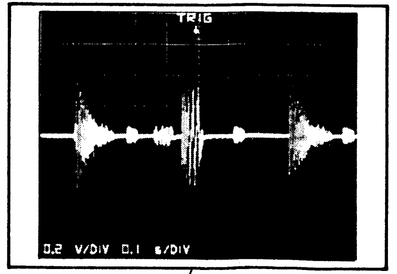
- Rhythm SW..........................8 beat
- Arrange Percussion............I

❺

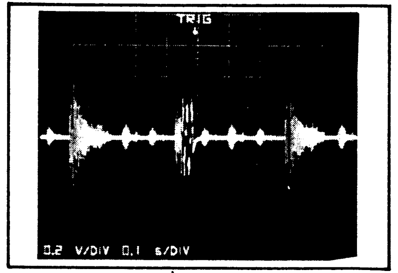


- Rhythm SW..........................Mambo
- Arrange Percussion............I

❻



❼



- Rhythm SW..........................16 beat
- Arrange Percussion............I

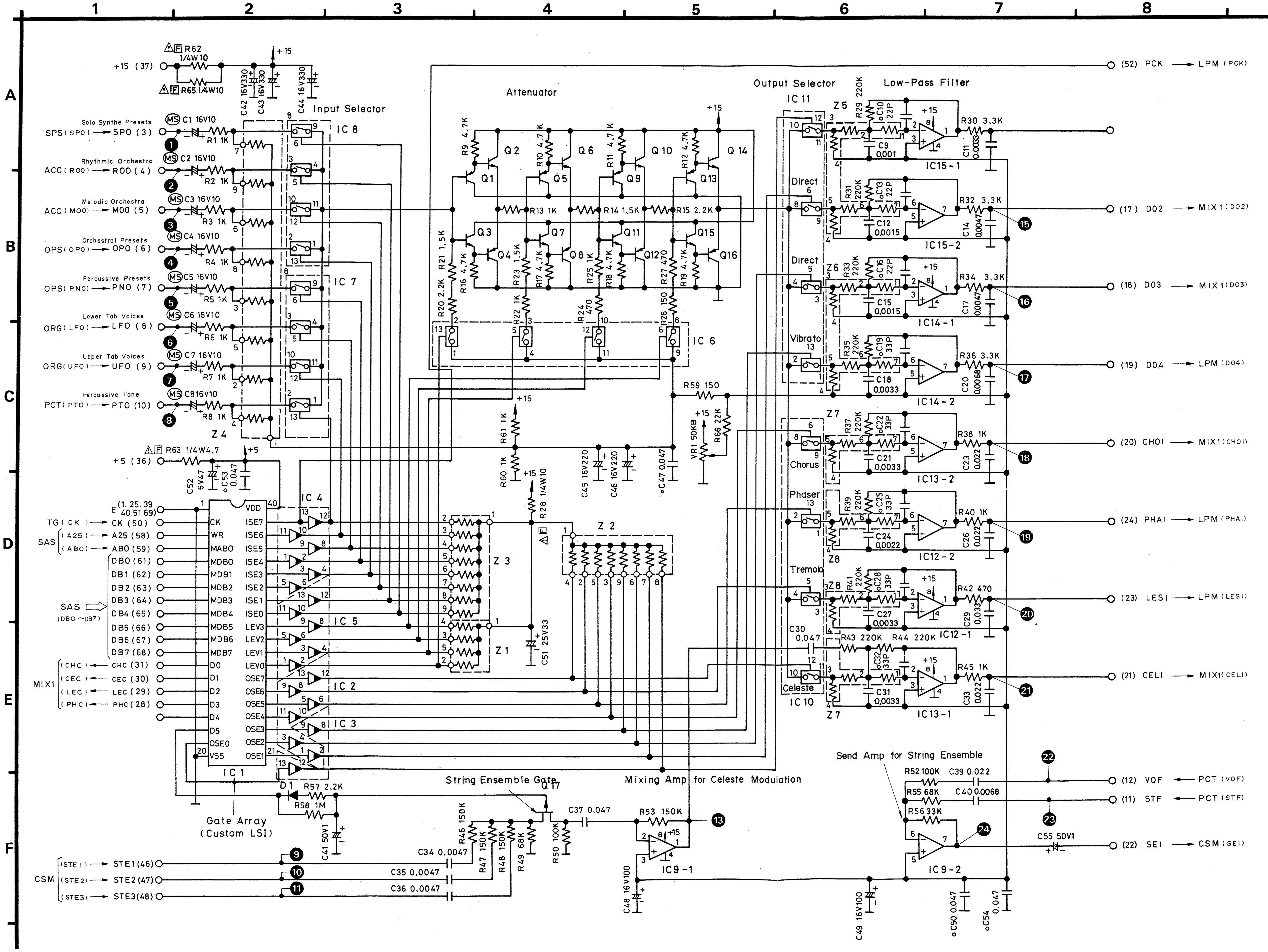
- Drum Percussion Vol..........max
- Main Vol, EXP......................max

**RVCV Terminal**

- Main Vol, EXP: Max
- Drum Percussion Volume

| | |
|---|---|
| step 1.................. | –3.6V |
| step 2.................. | –5.2V |
| step 3.................. | –8.2V |
| step 4.................. | –12.9V |

# SELECTOR CIRCUIT DIAGRAM (SEL)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
+15 (37)
R62 1/4W10
R65 1/4W10
C42 16V330
C43 16V330
C44 16V330
+15
Input Selector
IC 8
IC 7
Solo Synthe Presets
SPS(SPO) → SPO (3)
Rhythmic Orchestra
ACC(ROO) → ROO (4)
Melodic Orchestra
ACC(MOO) → MOO (5)
Orchestral Presets
OPS(OPO) → OPO (6)
Percussive Presets
OPS(PNO) → PNO (7)
Lower Tab Voices
ORG(LFO) → LFO (8)
Upper Tab Voices
ORG(UFO) → UFO (9)
Percussive Tone
PCT(PTO) → PTO (10)
Z 4
Attenuator
Q 2
Q 6
Q 10
Q 14
Q1
Q5
Q9
Q13
Q3
Q7
Q11
Q15
Q4
Q8
Q12
Q16
R13 1K
R14 1.5K
R15 2.2K
IC 6
R59 150
VR1 50KB
R66 22K
R61 1K
R60 1K
R28 1/4W10
C45 16V220
C46 16V220
C47 0.047
Output Selector
IC 11
Low-Pass Filter
Direct
Vibrato
Chorus
Phaser
Tremolo
Celeste
IC 10
IC15-1
IC15-2
IC14-1
IC14-2
IC13-2
IC12-2
IC12-1
IC13-1
(52) PCK → LPM (PCK)
(17) DO2 → MIX1 (DO2)
(18) DO3 → MIX1 (DO3)
(19) DO4 → LPM (DO4)
(20) CHOI → MIX1 (CHOI)
(24) PHAI → LPM (PHAI)
(23) LESI → LPM (LESI)
(21) CELI → MIX1 (CELI)
+5 (36)
R63 1/4W4.7
C52 6V47
C53 0.047
TG(CK) → CK (50)
SAS (A25) → A25 (58)
(ABO) → ABO (59)
SAS (DBO~DB7)
DB0 (61) … DB7 (68)
MIX1
(CHC) ← CHC (31)
(CEC) ← CEC (30)
(LEC) ← LEC (29)
(PHC) ← PHC (28)
IC 1
Gate Array (Custom LSI)
IC 4
IC 5
IC 2
IC 3
Z 3
Z 1
Z 2
C51 25V33
D1
R57 2.2K
R58 1M
C41 50V1
String Ensemble Gate
Q17
C37 0.047
R53 150K
Mixing Amp for Celeste Modulation
IC9-1
C48 16V100
CSM
(STE1) → STE1(46)
(STE2) → STE2(47)
(STE3) → STE3(48)
C34 0.0047
C35 0.0047
C36 0.0047
Send Amp for String Ensemble
R52 100K
C39 0.022
R55 68K
C40 0.0068
R56 33K
IC9-2
C55 50V1
(12) VOF ← PCT (VOF)
(11) STF ← PCT (STF)
(22) SEI → CSM (SEI)
C49 16V100
C50 0.047
C54 0.047

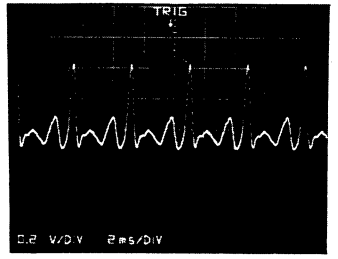
**NOTES:**
- IC'S
  - IC1: SVIG65002018
  - IC2~5: SVIGM53217
  - IC6~8, 10, 11: SVIGUPD4066B
  - IC9, 12~15: SVIGM5218L (SVIGNJM4558S)
- TRANSISTORS
  - Q1, 4, 5, 8, 9, 12, 13, 16: 2SA1015GR
  - Q2, 3, 6, 7, 10, 11, 14, 15: 2SC1815GR
  - Q17: 2SJ40CD
- DIODE
  - D1: MA165TA5VT
- COMPONENTS COMBINATIONS
  - Z1: EXBP84222MM
  - Z2, 3: EXBP88222MM
  - Z4: EXBP88102MM
  - Z5~8: SREG6A0511MM

# SELECTOR CIRCUIT BOARD (SEL)

1 2 3 4 5 6 7 8 9

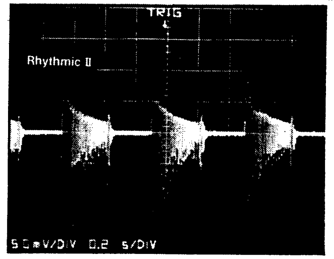
A B C D E F

## ❶ Solo Synthe Presets



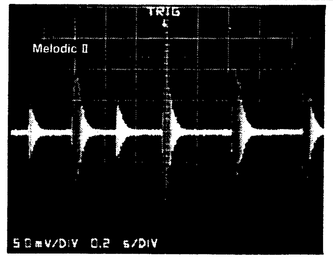
- U. Solo Synthe Presets.......Trumpet
- Upper Key............................C4

## ❷ Rhythmic Orchestra



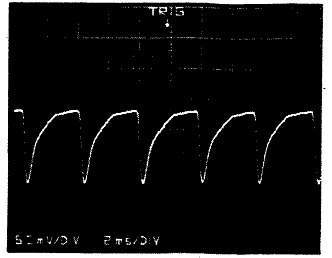
- Rhythm.................................march
- Arrange Percussion.............I

## ❸ Melodic Orchestra



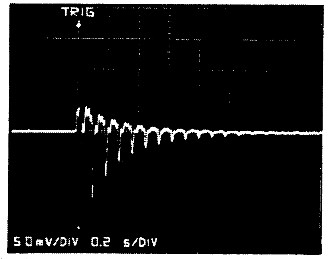
- One-Finger..........................C Key

## ❹ Orchestral Presets



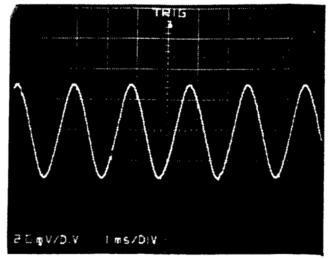
- U. Orchestral Presets..........Trombone
- Harmonic Control................Center
- Upper Key............................C4

## ❺ Percussive Presets



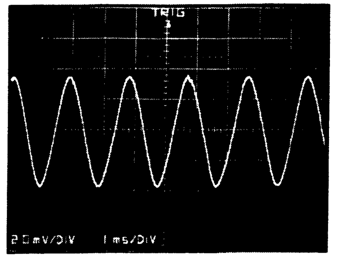
- U. Percussive Presets.........Acoustic Piano
- Harmonic Control...............Center
- Upper Key............................C4

## ❻ Lower Tab Voices



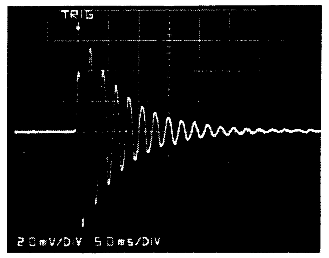
- Lower Tab.............................Flute 8′
- Lower Key.............................C4

## ❼ Upper Tab Voices

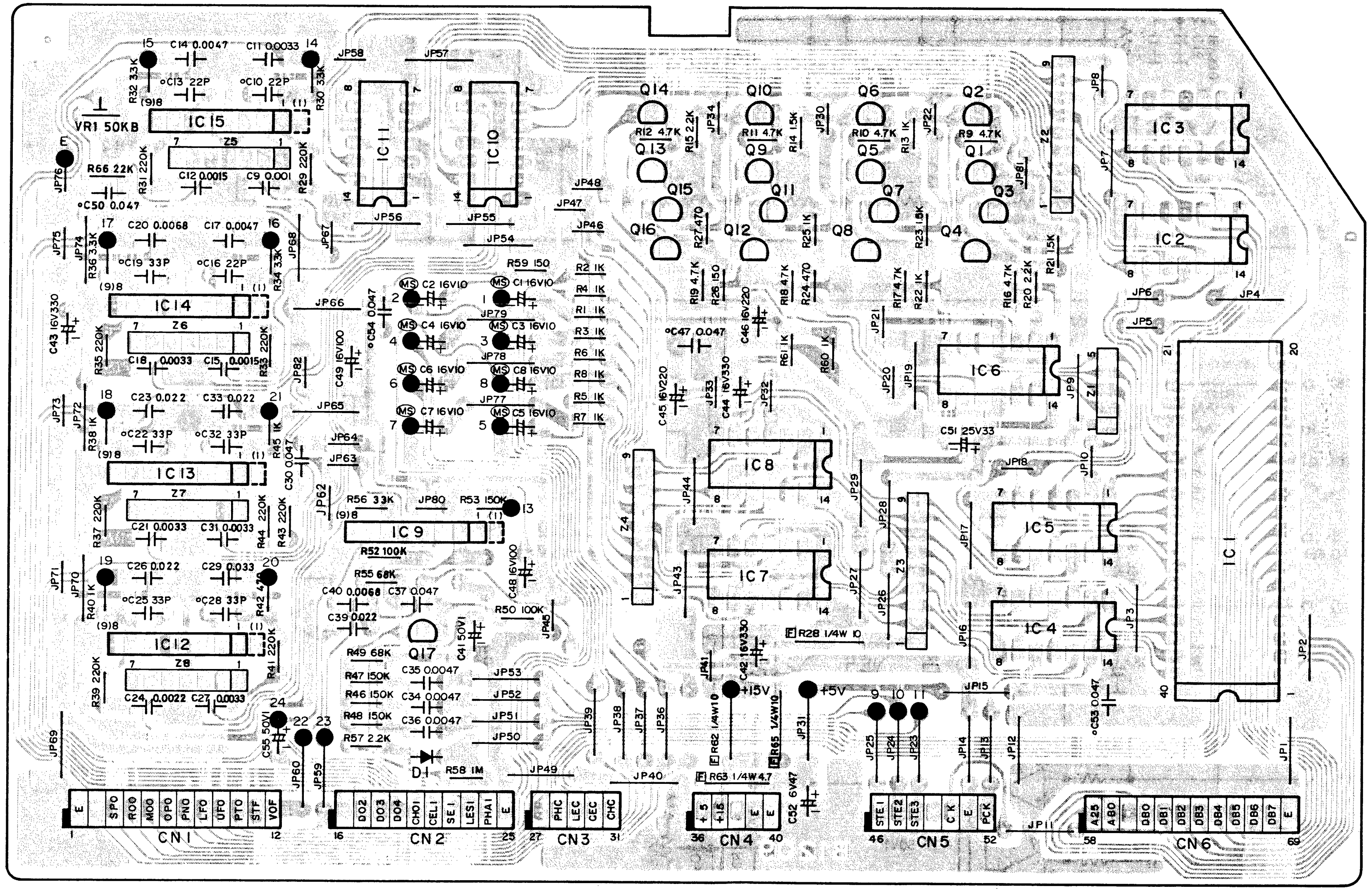


- Upper Tab.............................Flute 8′
- Upper Key.............................C4

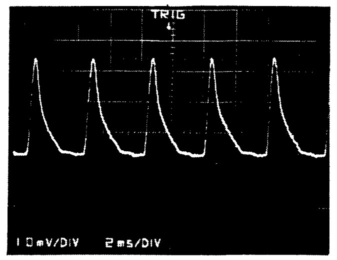
## ❽ Percussive Tone



- Percussive Tone..................4′
- Upper Key.............................C4

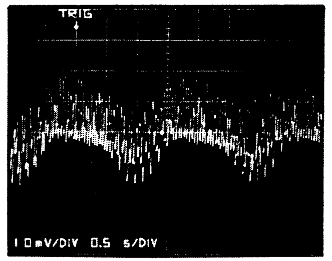

IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q17
Z1
Z2
Z3
Z4
Z5
Z6
Z7
Z8
VR1 50KB
D1
R58 1M
R57 2.2K
R28 1/4W 10
R62 1/4W10
R65 1/4W10
R63 1/4W4.7
C52 6V47
C53 0.047
C51 25V33
+15V
+5V
CN1
E
SPO
ROO
MOO
OPO
PNO
LFO
UFO
PTO
STF
VOF
1
12
CN2
DO2
DO3
DO4
CHO1
CEL1
SE1
LES1
PHA1
E
16
25
CN3
PHC
LEC
CEC
CHC
27
31
CN4
+5
+15
E
E
36
40
CN5
STE1
STE2
STE3
CK
E
PCK
46
52
CN6
A25
A80
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
58
69

## ⓯ Direct



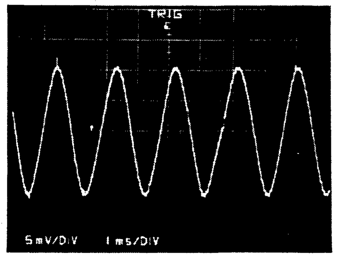
- U. Orchestral Presets..........Trombone
- Harmonic Control...............Center
- Volume.....max • Upper Key.....C4

## ❾, ❿, ⓫ String Ensemble



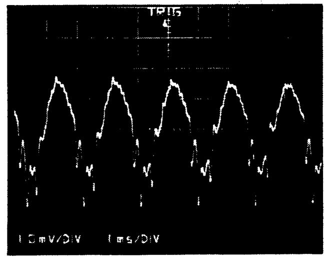
- U. String Ensemble............on
- Volume......max • Upper Key......C4

## ⓰ Direct



- Upper Tab......................Flute 8′
- Volume...........................max
- Upper Key......................C4

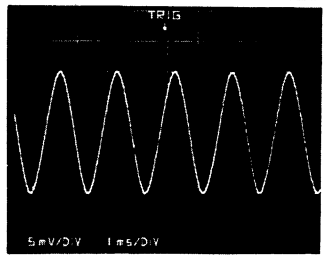
## ⓭



- U. String Ensemble............on
- Volume..............................max
- Upper Key..........................C4

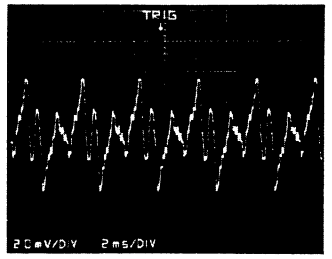
**SXPGB12092**

## ⓱ Vibrato



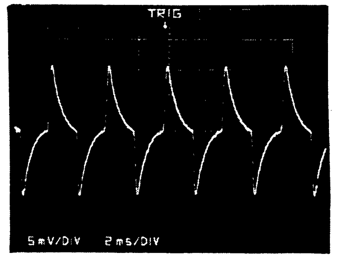
- Upper Tab......................Flute 8′
- Volume...........................max
- Vibrato...........................ON
- Upper Key......................C4

## ⓲ Chorus



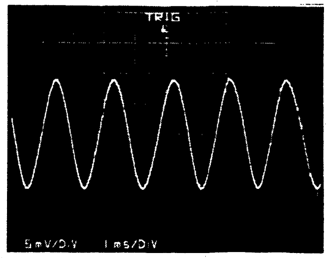
- 20 Combination VSC ..........No. 15
- Upper Key...........................C4
- Solo Synthe Presets ........Cosmic
- Solo Synthe Volume ........max

## ⓳ Phaser



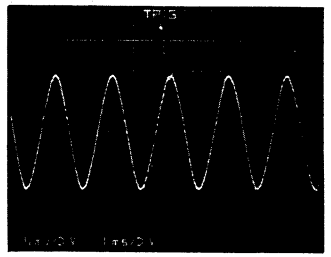
- 20 Combination VSC ..........No. 15
- Upper Key...........................C4
- Orchestral Presets ...........Clarinet
- Harmonic Control.............Center
- Volume..............................Step 1

## ⓴ Tremolo



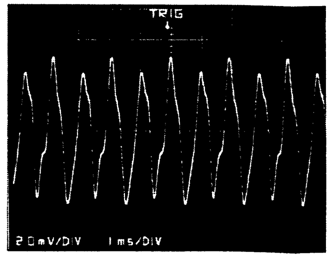
- Upper Tab.......................Flute 8′
- Volume............................max
- Tremolo..........................U. Tab ON
- Upper Key.......................C4

## ㉑ Celeste



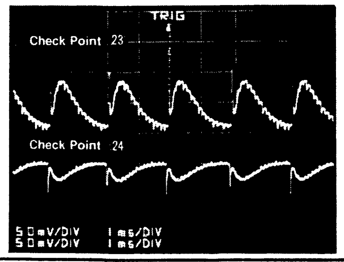
- Upper Tab.......................Flute 8′
- Volume............................max
- Celeste...........................U. Tab ON
- Upper Key.......................C4

## ㉒



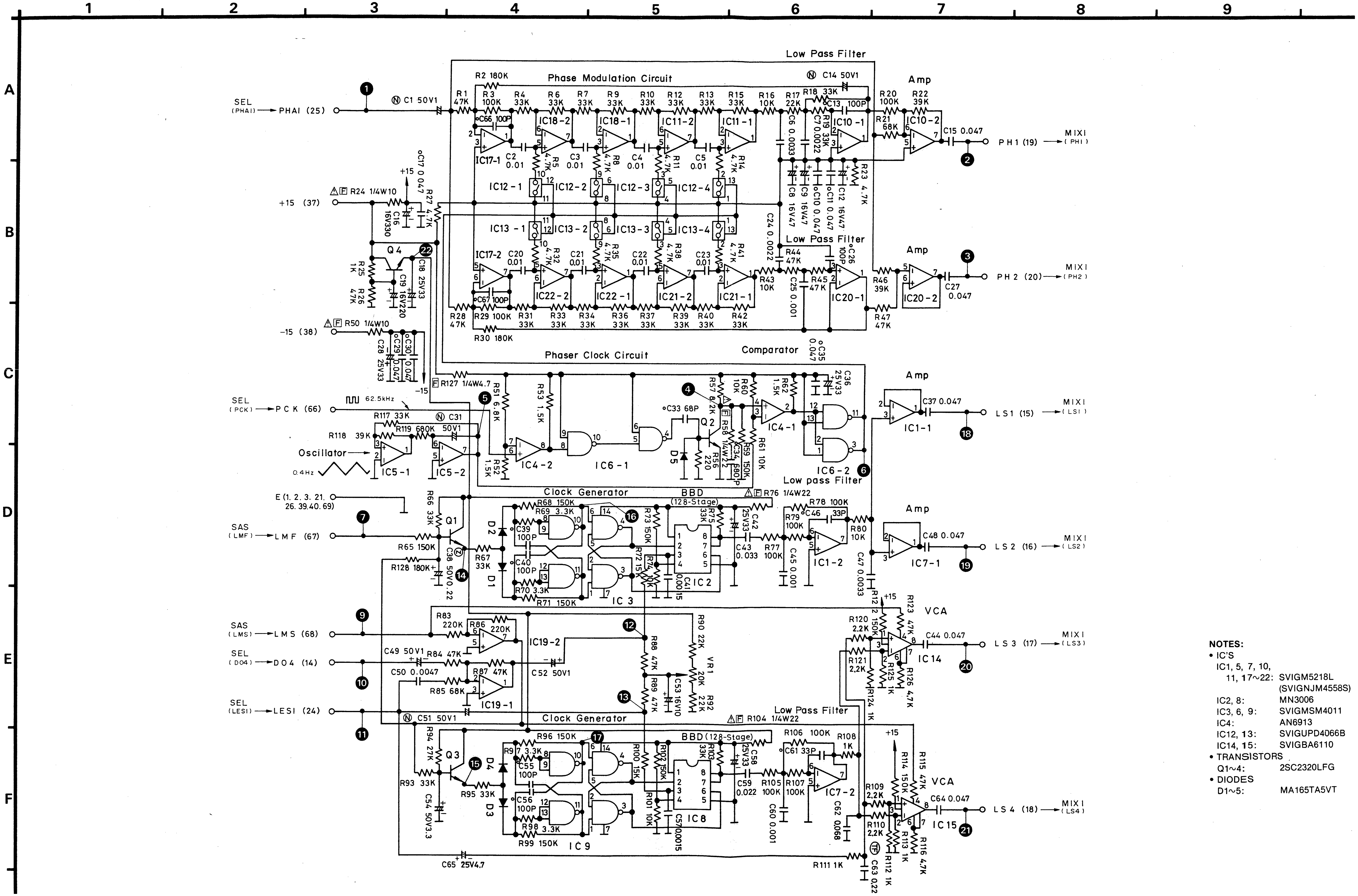
- U. Vocal Ensemble.............on
- Volume.................................max
- Upper Key............................C4

## ㉓ ㉔



- U. String Ensemble.............Violin
- Volume...............................max
- Upper Key...........................C4

# TREMOLO & PHASER MODULATION CIRCUIT DIAGRAM (LPM)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
Low Pass Filter
Phase Modulation Circuit
Amp
SEL (PHAI) → PHAI (25)
PH1 (19) → MIXI (PH1)
PH2 (20) → MIXI (PH2)
+15 (37)
-15 (38)
Phaser Clock Circuit
Comparator
SEL (PCK) → PCK (66)
62.5kHz
Oscillator
0.4Hz
IC5-1
IC5-2
IC4-2
IC6-1
IC4-1
IC6-2
Low pass Filter
LS1 (15) → MIXI (LS1)
E (1. 2. 3. 21. 26. 39.40. 69)
SAS (LMF) → LMF (67)
Clock Generator
BBD (128-Stage)
IC3
IC2
IC1-1
IC1-2
LS2 (16) → MIXI (LS2)
IC7-1
SAS (LMS) → LMS (68)
SEL (DO4) → DO4 (14)
SEL (LESI) → LESI (24)
IC19-1
IC19-2
VCA
IC14
LS3 (17) → MIXI (LS3)
IC8
IC9
IC7-2
IC15
LS4 (18) → MIXI (LS4)
IC17-1
IC17-2
IC18-1
IC18-2
IC11-1
IC11-2
IC10-1
IC10-2
IC12-1
IC12-2
IC12-3
IC12-4
IC13-1
IC13-2
IC13-3
IC13-4
IC20-1
IC20-2
IC21-1
IC21-2
IC22-1
IC22-2
Q1
Q2
Q3
Q4
D1
D2
D3
D4
D5
VR1
R24 1/4W10
R50 1/4W10
R127 1/4W4.7
R76 1/4W22
R104 1/4W22
C1 50V1
C14 50V1
C15 0.047
C27 0.047
C37 0.047
C48 0.047
C44 0.047
C64 0.047

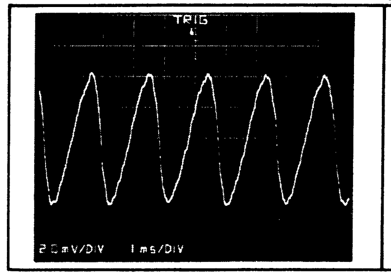
NOTES:
- IC'S
  - IC1, 5, 7, 10, 11, 17~22: SVIGM5218L (SVIGNJM4558S)
  - IC2, 8: MN3006
  - IC3, 6, 9: SVIGMSM4011
  - IC4: AN6913
  - IC12, 13: SVIGUPD4066B
  - IC14, 15: SVIGBA6110
- TRANSISTORS
  - Q1~4: 2SC2320LFG
- DIODES
  - D1~5: MA165TA5VT

# TREMOLO & PHASER MODULATION CIRCUIT BOARD (LPM)

1 2 3 4 5 6 7 8 9

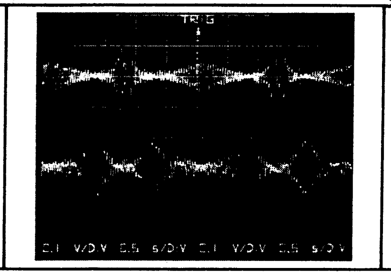
A

①



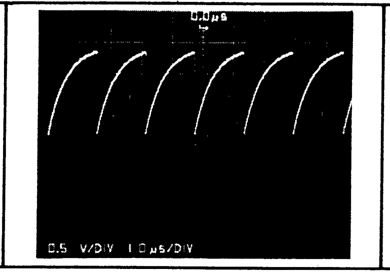
- 20 Combination VSC ..........No. 17
- Solo Synthe Presets ...........Flute
- Upper Key..............................C4

②,③

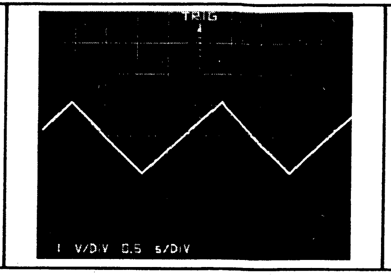


- 20 Combination VSC ..........No. 17
- Solo Synthe Presets ...........Flute
- Upper Key..............................C4

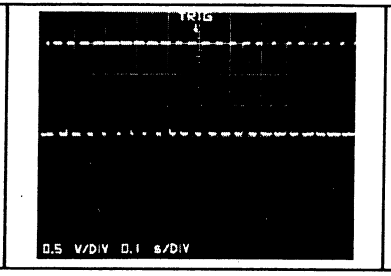
④ 62.5KHz



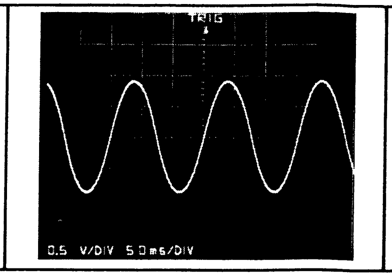
⑤ 0.4Hz



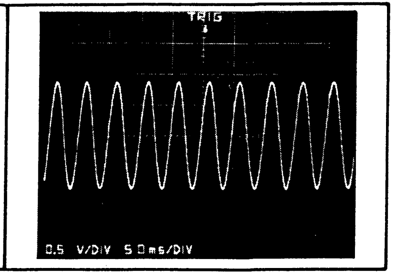
⑥



⑦ Vibrato: 6.6Hz

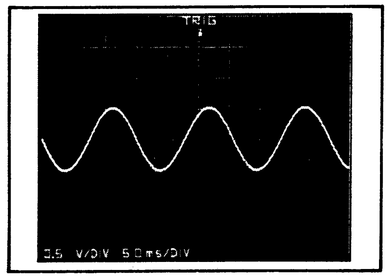


⑦ Tremolo: Fast



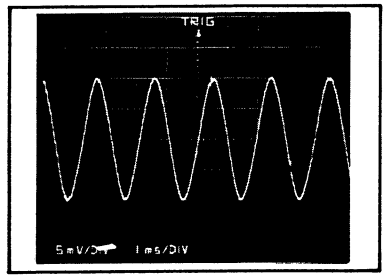
B

⑨ Tremolo: Fast



C

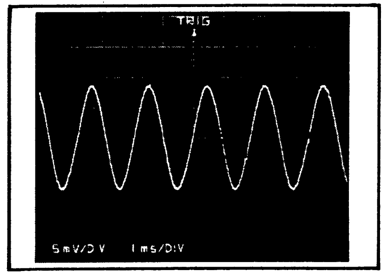
⑩ Vibrato



- Upper Tab.....Flute 8′ • Volume.....max
- Upper Key.....C4 • Vibrato.....ON

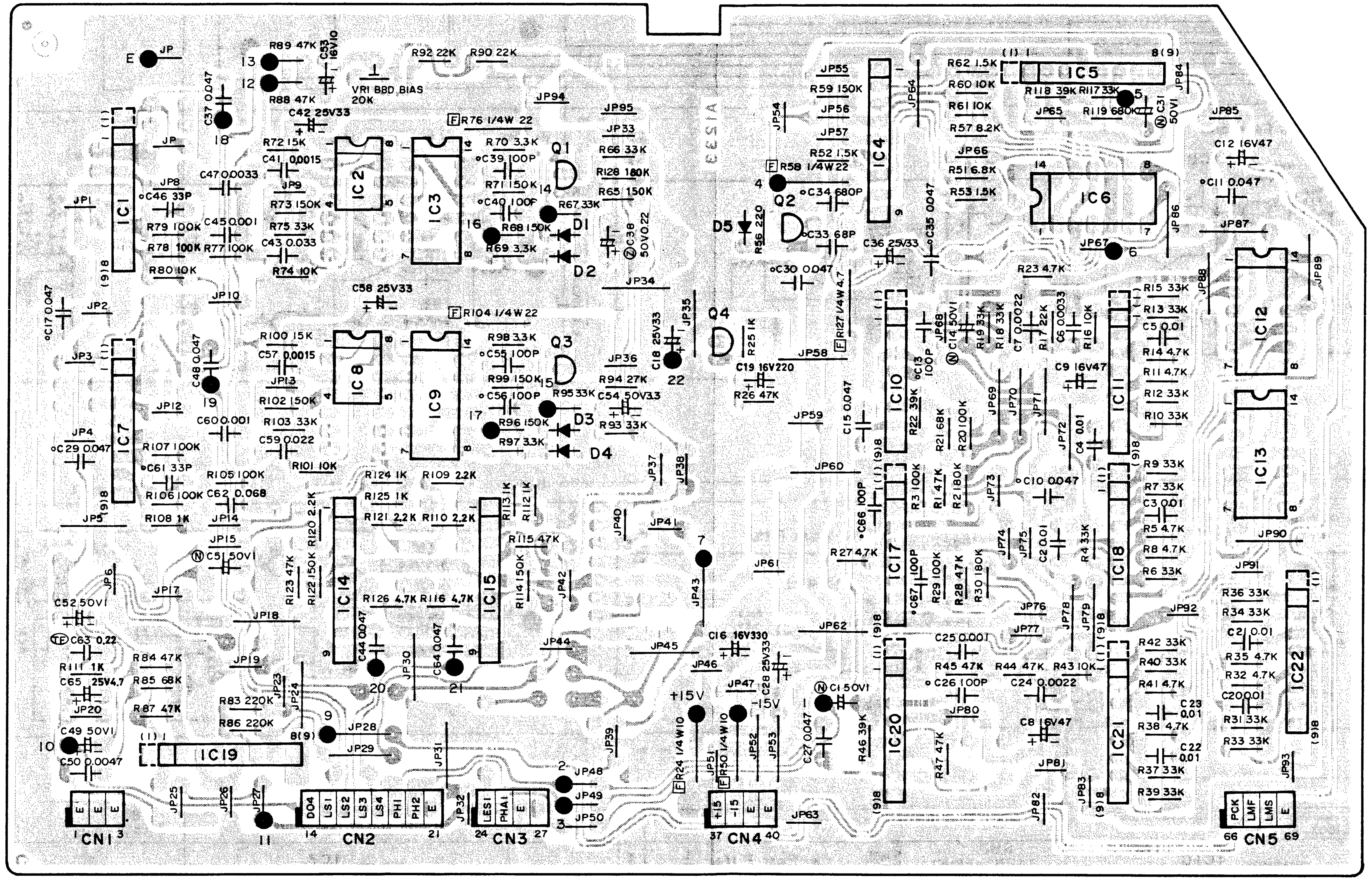
D

⑪ Tremolo



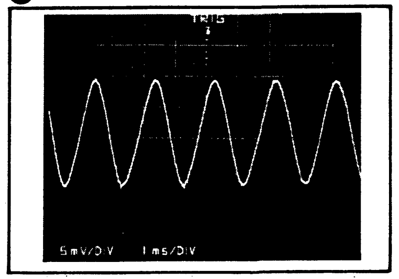
- Upper Tab.....Flute 8′ • Volume.....max
- Upper Key.....C4 • Tremolo.....U. Tab ON

E


E
JP
13
12
18
19
20
21
9
8(9)
10
11
14
16
17
15
22
7
4
5
6
2
1
3
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC17
IC18
IC19
IC20
IC21
IC22
Q1
Q2
Q3
Q4
D1
D2
D3
D4
D5
VR1 88D BIAS 20K
R92 22K
R90 22K
R89 47K
R88 47K
R76 1/4W 22
R104 1/4W 22
R58 1/4W 22
R127 1/4W 4.7
R24 1/4W 10
R50 1/4W 10
+15V
-15V
CN1
CN2
CN3
CN4
CN5
E
LS1
LS2
LS3
LS4
PH1
PH2
PHA1
D04
LES1
+15
-15
PCK
LMF
LMS
1
3
11
14
21
24
27
37
40
66
69

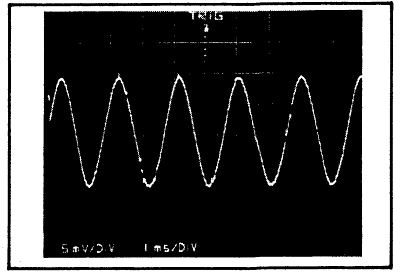
SXPGA12331

⑫



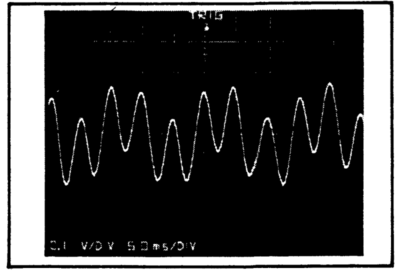
- Upper Tab.....Flute 8′ • Volume.....max
- Upper Key.....C4 • Vibrato.....ON

⑬



- Upper Tab.....Flute 8′ • Volume.....max
- Upper Key.....C4 • Tremolo.....U. Tab ON

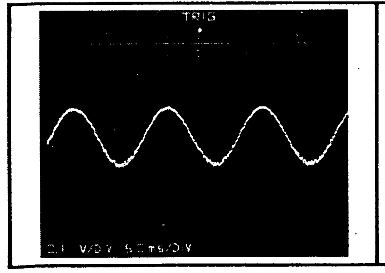
⑭



- Tremolo...........................Fast

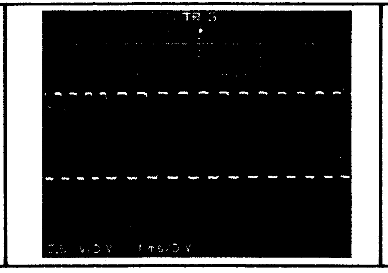
F

⑮



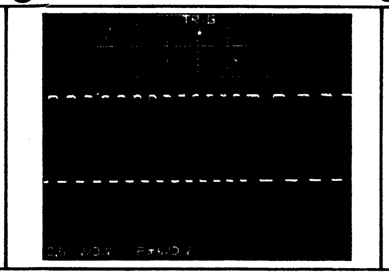
- Tremolo...........................Fast

⑯



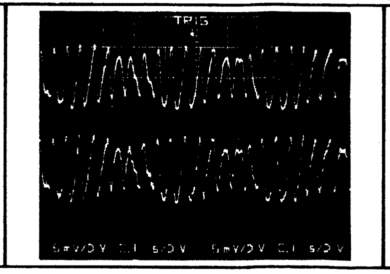
- Tremolo...........................Fast

⑰

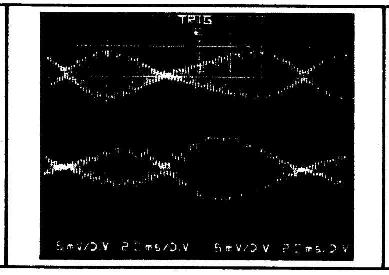


- Tremolo...........................Fast

⑱,⑲



⑳,㉑

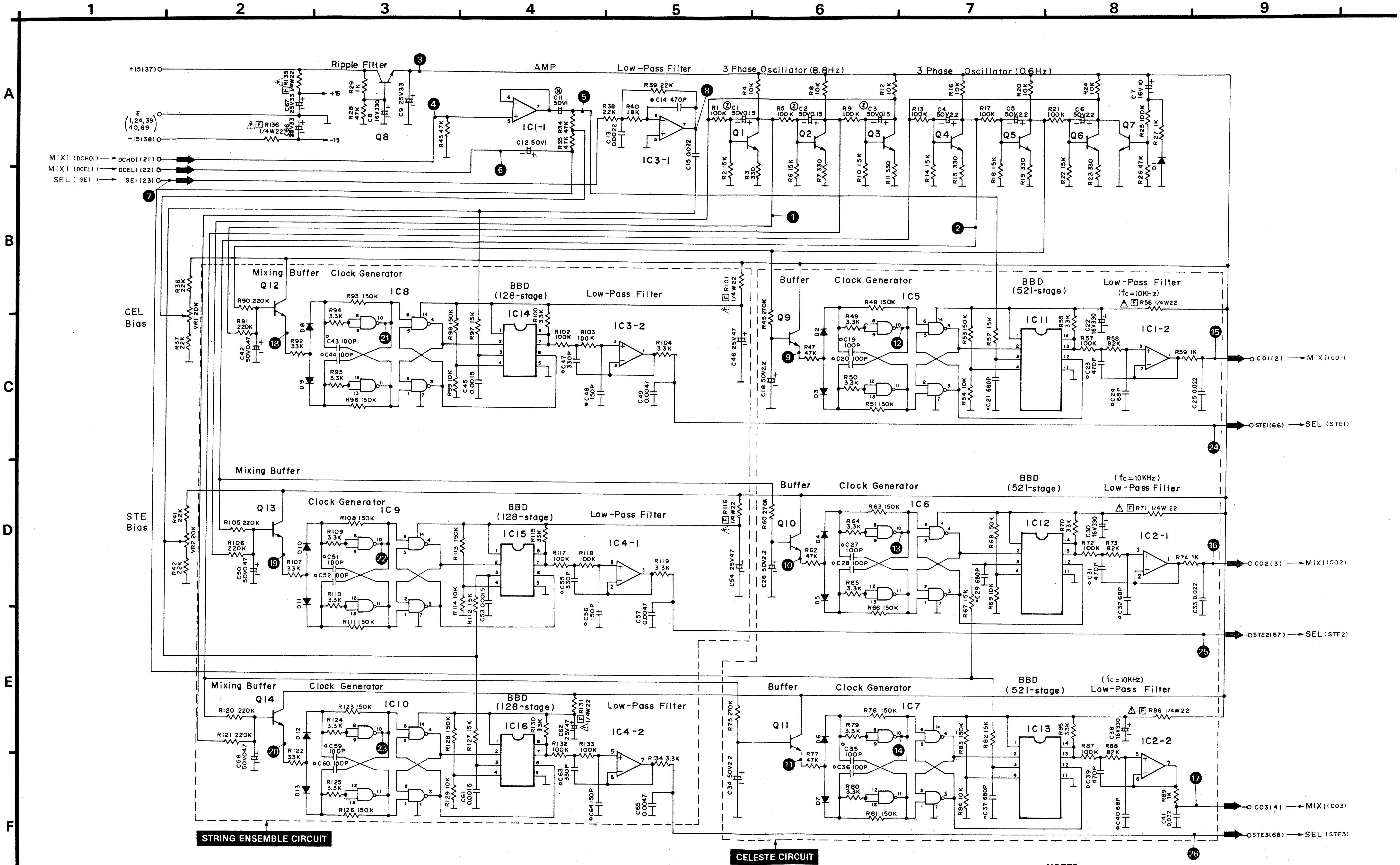


(• Upper Tab......................Flute 8′ • Volume...............................max
• Upper Key......................C4 • Tremolo (fast).................U. Tab ON)

㉒

DC 14V

# CELESTE & STRING ENSEMBLE CIRCUIT DIAGRAM (CSM)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
+15(37)
E (1,24,39, 40,69)
-15(38)
+15
-15
Ripple Filter
Q8
AMP
IC1-1
Low-Pass Filter
IC3-1
3 Phase Oscillator (8.8Hz)
3 Phase Oscillator (0.6Hz)
Q1
Q2
Q3
Q4
Q5
Q6
Q7
MIX1 (DCHO1) DCHO1(21)
MIX1 (DCEL1) DCEL1(22)
SEL (SE1) SE1(23)
CEL Bias
VR1 20K
Mixing Buffer
Q12
Clock Generator
IC8
BBD (128-stage)
IC14
Low-Pass Filter
IC3-2
Buffer
Q9
Clock Generator
IC5
BBD (521-stage)
IC11
Low-Pass Filter (fc=10KHz)
IC1-2
CO1(2) MIX1(CO1)
STE1(66) SEL (STE1)
STE Bias
VR2 20K
Mixing Buffer
Q13
Clock Generator
IC9
BBD (128-stage)
IC15
Low-Pass Filter
IC4-1
Buffer
Q10
Clock Generator
IC6
BBD (521-stage)
IC12
(fc=10KHz) Low-Pass Filter
IC2-1
CO2(3) MIX1(CO2)
STE2(67) SEL (STE2)
Mixing Buffer
Q14
Clock Generator
IC10
BBD (128-stage)
IC16
Low-Pass Filter
IC4-2
Buffer
Q11
Clock Generator
IC7
BBD (521-stage)
IC13
(fc=10KHz) Low-Pass Filter
IC2-2
CO3(4) MIX1(CO3)
STE3(68) SEL (STE3)
STRING ENSEMBLE CIRCUIT
CELESTE CIRCUIT

**NOTES:**

- IC'S

  IC1~4: SVIGM5218L (SVIGNJM4558S)

  IC5~10: SVIGMSM4011

  IC11~13: MN3004

  IC14~16: MN3006

- TRANSISTORS

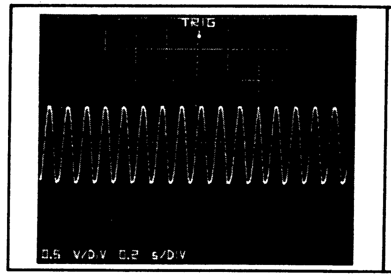
  Q1~14: 2SC2320LFG

- DIODES

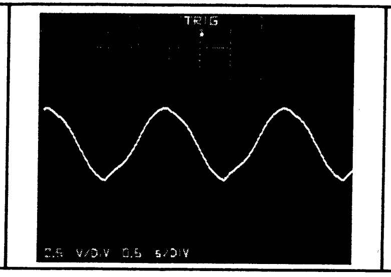
  D1~13: MA165TA5VT

# CELESTE & STRING ENSEMBLE CIRCUIT BOARD (CSM)

① 8Hz



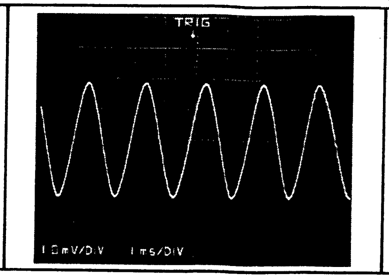
② 0.5Hz



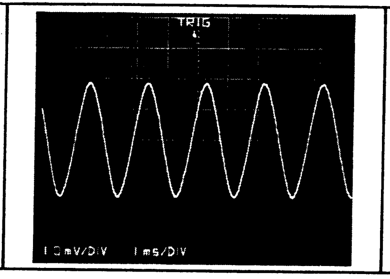
③

DC +14V

④

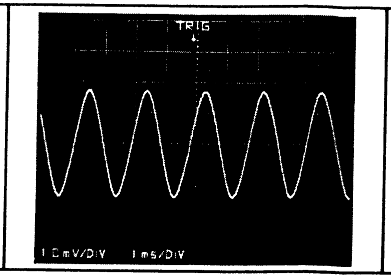


⑤



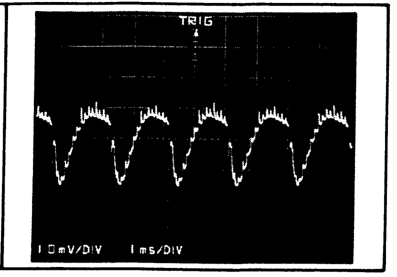
- Upper Tab....................Flute 8'
- Upper Key....................C4
- Volume ..........................max
- Celeste ..........................U. Tab ON

⑥

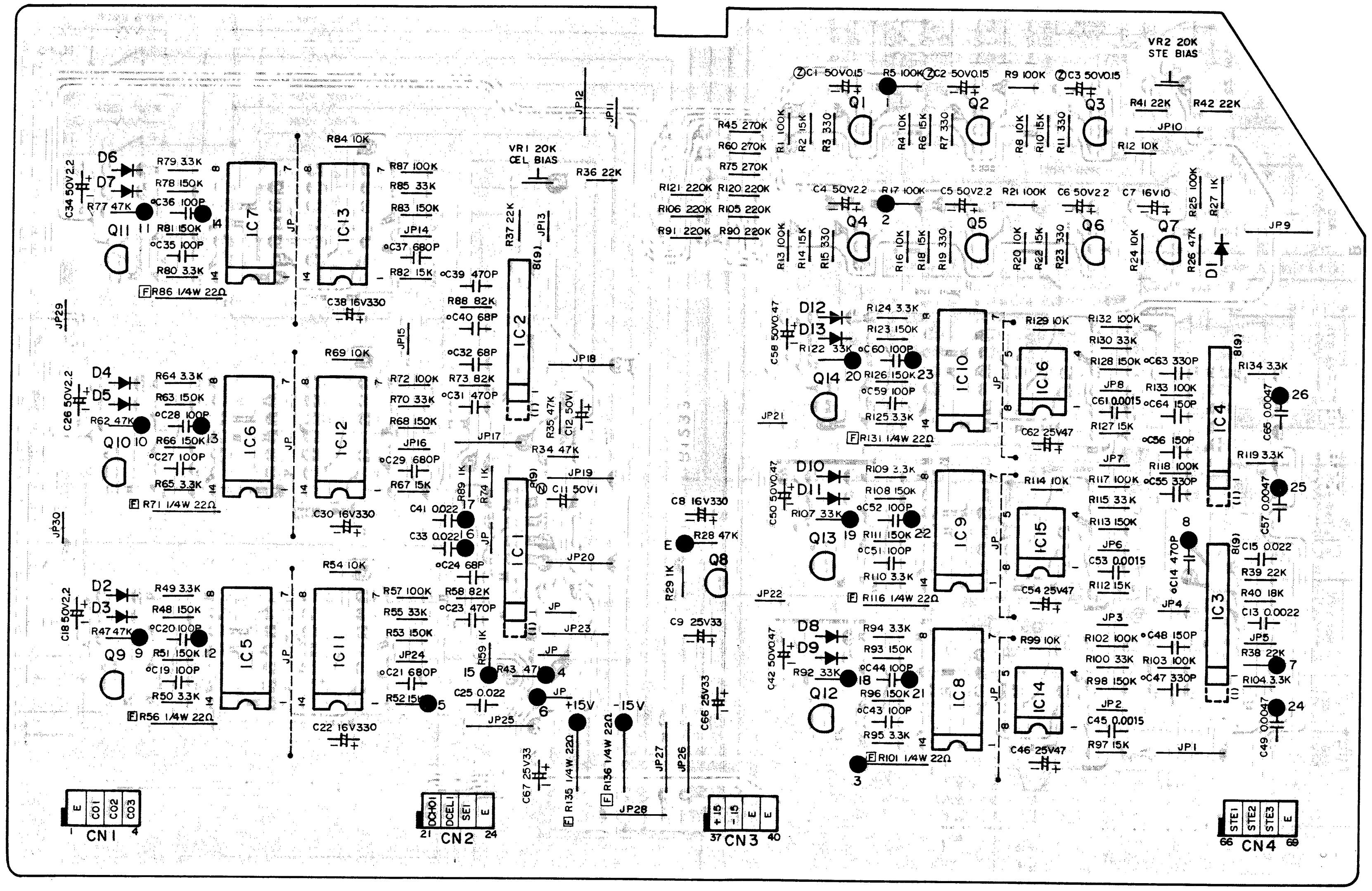


- Upper Tab.....Flute 8'
- Volume.....max
- Upper Key.....C4
- Celeste.....U. Tab ON

⑦



- U. String Ensemble............on
- Volume.................................max
- Upper Key............................C4


1
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8
9
A
B
C
D
E
F
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
VR1 20K CEL BIAS
VR2 20K STE BIAS
R84 10K
R87 100K
R85 33K
R83 150K
R82 15K
R79 3.3K
R78 150K
R77 47K
R81 150K
R80 3.3K
R86 1/4W 22Ω
R69 10K
R72 100K
R70 33K
R68 150K
R67 15K
R64 3.3K
R63 150K
R62 47K
R66 150K
R65 3.3K
R71 1/4W 22Ω
R54 10K
R57 100K
R55 33K
R53 150K
R52 15K
R49 3.3K
R48 150K
R47 47K
R51 150K
R50 3.3K
R56 1/4W 22Ω
R36 22K
R37 22K
R88 82K
R73 82K
R58 82K
R89 1K
R74 1K
R59 1K
R35 47K
R34 47K
R43 47K
R45 270K
R60 270K
R75 270K
R121 220K
R120 220K
R106 220K
R105 220K
R91 220K
R90 220K
R1 100K
R2 15K
R3 330
R4 10K
R5 100K
R6 15K
R7 330
R8 10K
R9 100K
R10 15K
R11 330
R12 10K
R13 100K
R14 15K
R15 330
R16 10K
R17 100K
R18 15K
R19 330
R20 10K
R21 100K
R22 15K
R23 330
R24 10K
R25 100K
R26 47K
R27 1K
R28 47K
R29 1K
R41 22K
R42 22K
R124 3.3K
R123 150K
R122 33K
R126 150K
R125 3.3K
R131 1/4W 22Ω
R129 10K
R132 100K
R130 33K
R128 150K
R133 100K
R127 15K
R109 3.3K
R108 150K
R107 33K
R111 150K
R110 3.3K
R116 1/4W 22Ω
R114 10K
R117 100K
R115 33K
R113 150K
R118 100K
R112 15K
R94 3.3K
R93 150K
R92 33K
R96 150K
R95 3.3K
R101 1/4W 22Ω
R99 10K
R102 100K
R100 33K
R98 150K
R103 100K
R97 15K
R134 3.3K
R119 3.3K
R39 22K
R40 18K
R38 22K
R104 3.3K
R135 1/4W 22Ω
R136 1/4W 22Ω
C1 50V0.15
C2 50V0.15
C3 50V0.15
C4 50V2.2
C5 50V2.2
C6 50V2.2
C7 16V10
C8 16V330
C9 25V33
C11 50V1
C12 50V1
C13 0.0022
C14 470P
C15 0.022
C18 50V2.2
C19 100P
C20 100P
C21 680P
C22 16V330
C23 470P
C24 68P
C25 0.022
C26 50V2.2
C27 100P
C28 100P
C29 680P
C30 16V330
C31 470P
C32 68P
C33 0.022
C34 50V2.2
C35 100P
C36 100P
C37 680P
C38 16V330
C39 470P
C40 68P
C41 0.022
C42 50V47
C43 100P
C44 100P
C45 0.0015
C46 25V47
C47 330P
C48 150P
C49 0.0047
C50 50V47
C51 100P
C52 100P
C53 0.0015
C54 25V47
C55 330P
C56 150P
C57 0.0047
C58 50V47
C59 100P
C60 100P
C61 0.0015
C62 25V47
C63 330P
C64 150P
C65 0.0047
C66 25V33
C67 25V33
JP1
JP2
JP3
JP4
JP5
JP6
JP7
JP8
JP9
JP10
JP11
JP12
JP13
JP14
JP15
JP16
JP17
JP18
JP19
JP20
JP21
JP22
JP23
JP24
JP25
JP26
JP27
JP28
JP29
JP30
+15V
-15V
E
CN1
E
CO1
CO2
CO3
CN2
DCH01
DCEL1
SE1
E
CN3
+15
-15
E
E
CN4
STE1
STE2
STE3
E
1
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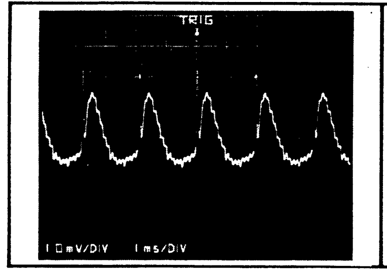
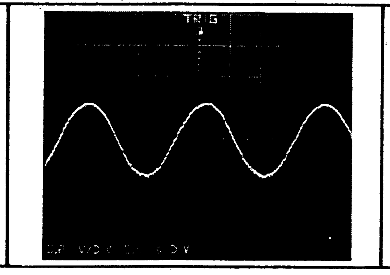
SXPGB12331

⑧

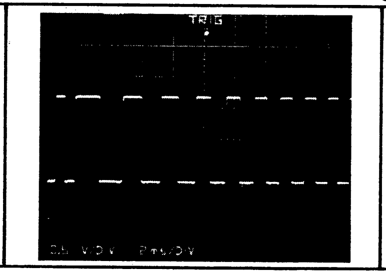


- U. String Ensemble............on
- Volume.................................max
- Upper Key............................C4

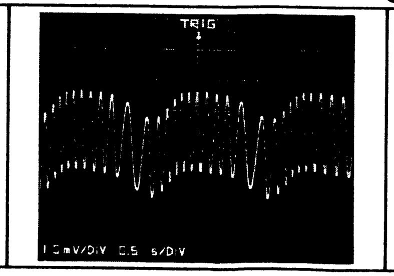
⑨, ⑩, ⑪ 0.5Hz



⑫, ⑬, ⑭

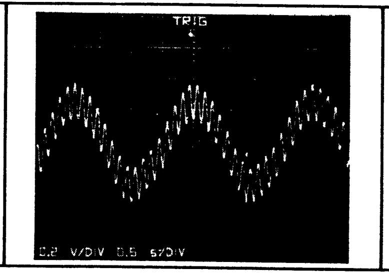


⑮, ⑯, ⑰ Celeste

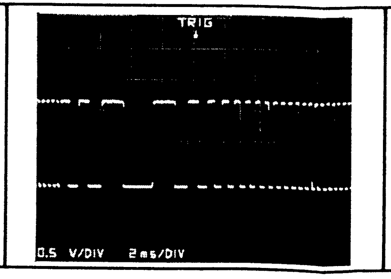


- Upper Tab.....Flute 8'
- Volume.....max
- Upper Key.....C4
- Celeste.....U. Tab ON

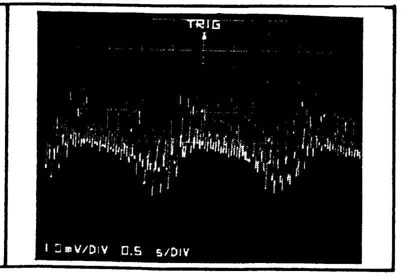
⑱, ⑲, ⑳



㉑, ㉒, ㉓

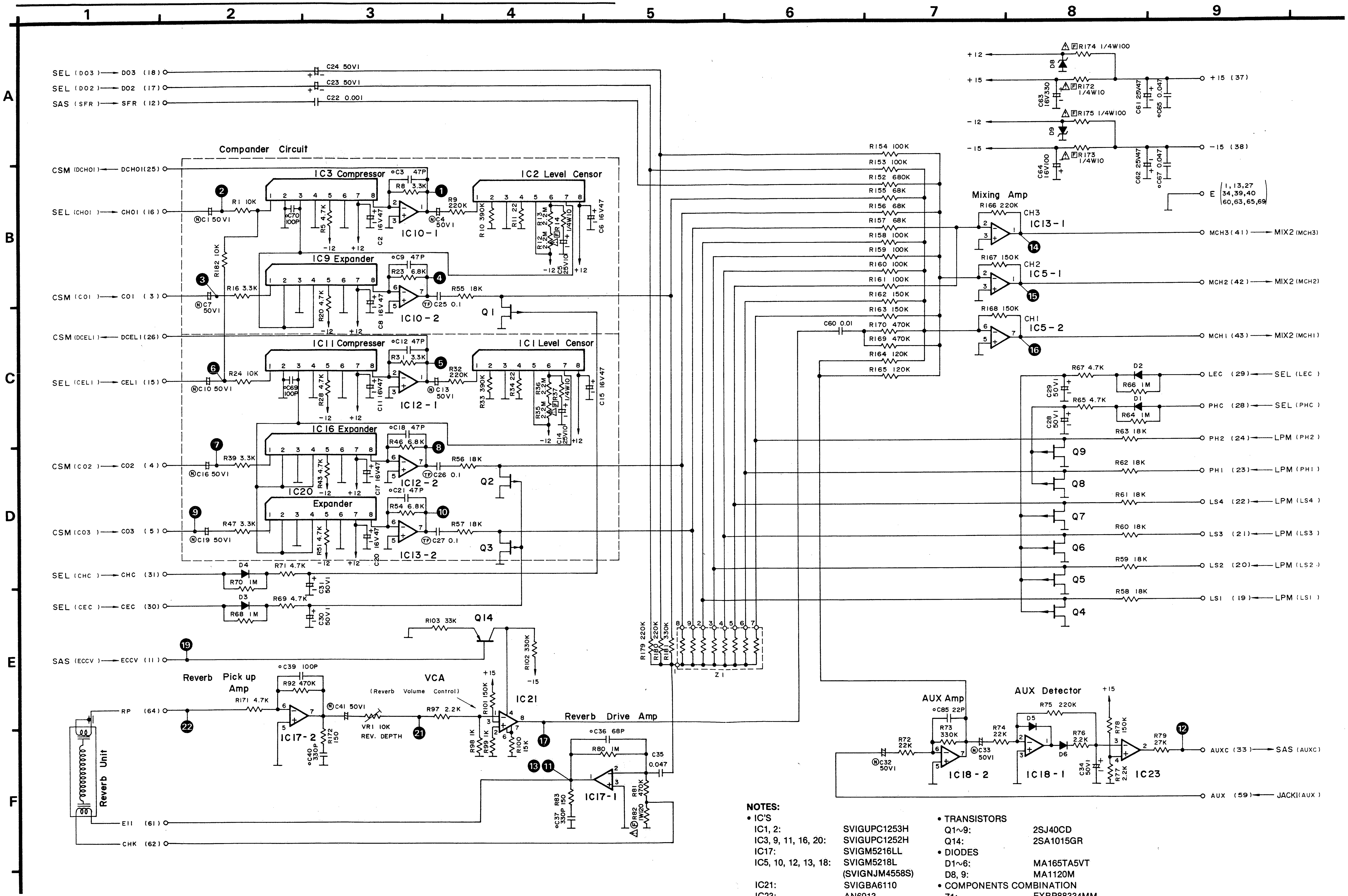


㉔, ㉕, ㉖



- U. String Ensemble............ON
- Volume.................................max
- Upper Key............................C4

# MIXING 1 CIRCUIT DIAGRAM (MIX1)



1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
SEL (D03) — D03 (18)
SEL (D02) — D02 (17)
SAS (SFR) — SFR (12)
C24 50V1
C23 50V1
C22 0.001
Compander Circuit
CSM (DCH01) — DCH01 (25)
SEL (CH01) — CH01 (16)
IC3 Compressor
IC2 Level Censor
IC10-1
IC9 Expander
IC10-2
CSM (C01) — C01 (3)
CSM (DCEL1) — DCEL1 (26)
IC11 Compressor
IC1 Level Censor
SEL (CEL1) — CEL1 (15)
IC12-1
IC16 Expander
CSM (C02) — C02 (4)
IC12-2
IC20
Expander
CSM (C03) — C03 (5)
IC13-2
Q1
Q2
Q3
SEL (CHC) — CHC (31)
SEL (CEC) — CEC (30)
D3
D4
R70 1M
R68 1M
R71 4.7K
R69 4.7K
Q14
R103 33K
R102 330K
SAS (ECCV) — ECCV (11)
Reverb Pick up Amp
VCA
(Reverb Volume Control)
VR1 10K REV. DEPTH
IC17-2
IC21
Reverb Drive Amp
IC17-1
RP (64)
E11 (61)
CHK (62)
Reverb Unit
Z1
R179 220K
R180 220K
R181 330K
+12
+15
-12
-15
R174 1/4W100
R172 1/4W10
R175 1/4W100
R173 1/4W10
D8
D9
+15 (37)
-15 (38)
E (1,13,27 34,39,40 60,63,65,69)
Mixing Amp
R166 220K
R167 150K
R168 150K
CH3
CH2
CH1
IC13-1
IC5-1
IC5-2
MCH3 (41) — MIX2 (MCH3)
MCH2 (42) — MIX2 (MCH2)
MCH1 (43) — MIX2 (MCH1)
R154 100K
R153 100K
R152 680K
R155 68K
R156 68K
R157 68K
R158 100K
R159 100K
R160 100K
R161 100K
R162 150K
R163 150K
R170 470K
R169 470K
R164 120K
R165 120K
C60 0.01
LEC (29) — SEL (LEC)
PHC (28) — SEL (PHC)
PH2 (24) — LPM (PH2)
PH1 (23) — LPM (PH1)
LS4 (22) — LPM (LS4)
LS3 (21) — LPM (LS3)
LS2 (20) — LPM (LS2)
LS1 (19) — LPM (LS1)
D1
D2
Q4
Q5
Q6
Q7
Q8
Q9
R58 18K
R59 18K
R60 18K
R61 18K
R62 18K
R63 18K
AUX Amp
AUX Detector
IC18-2
IC18-1
IC23
AUXC (33) — SAS (AUXC)
AUX (59) — JACK1 (AUX)

**NOTES:**

• IC'S
IC1, 2: SVIGUPC1253H
IC3, 9, 11, 16, 20: SVIGUPC1252H
IC17: SVIGM5216LL
IC5, 10, 12, 13, 18: SVIGM5218L (SVIGNJM4558S)
IC21: SVIGBA6110
IC23: AN6913

• TRANSISTORS
Q1~9: 2SJ40CD
Q14: 2SA1015GR

• DIODES
D1~6: MA165TA5VT
D8, 9: MA1120M

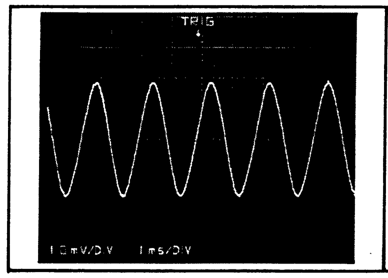
• COMPONENTS COMBINATION
Z1: EXBP88334MM

# MIXING 1 CIRCUIT BOARD (MIX1)

1 2 3 4 5 6 7 8 9

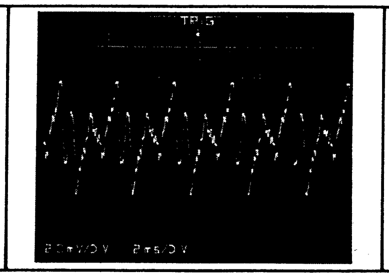
A

①



- Upper Tab......Flute 8′ • Volume......max
- Upper Key......C4 • Celeste......U. Tab ON

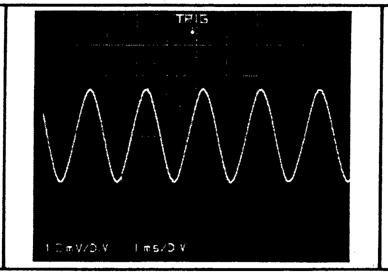
②



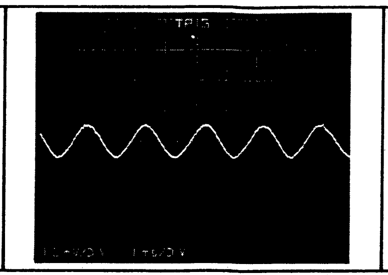
- 20 Combination VSC ..........No. 15
- Upper Key............................C4

(• Solo Synthe Presets .......Cosmic)

③

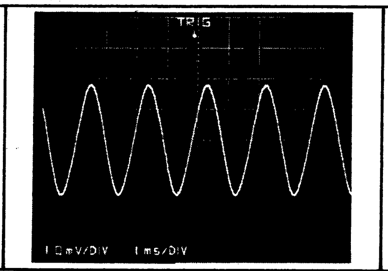


④

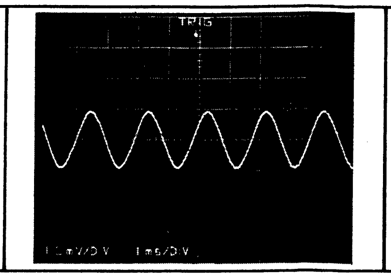


( • Upper Tab.....................Flute 8′ • Volume..........................max )
( • Upper Key.....................C4 • Celeste..........................U. Tab ON )

⑤

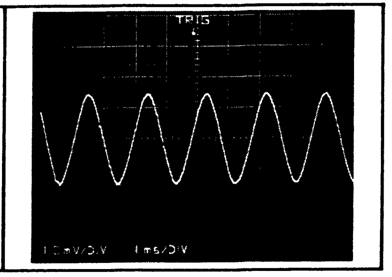


⑥



( • Upper Tab.....................Flute 8′ • Volume..........................max )
( • Upper Key.....................C4 • Celeste..........................U. Tab ON )

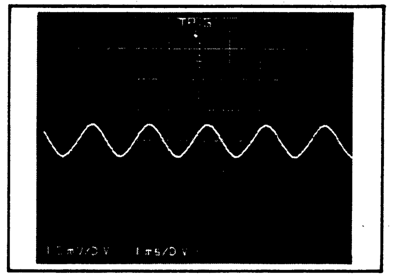
⑦



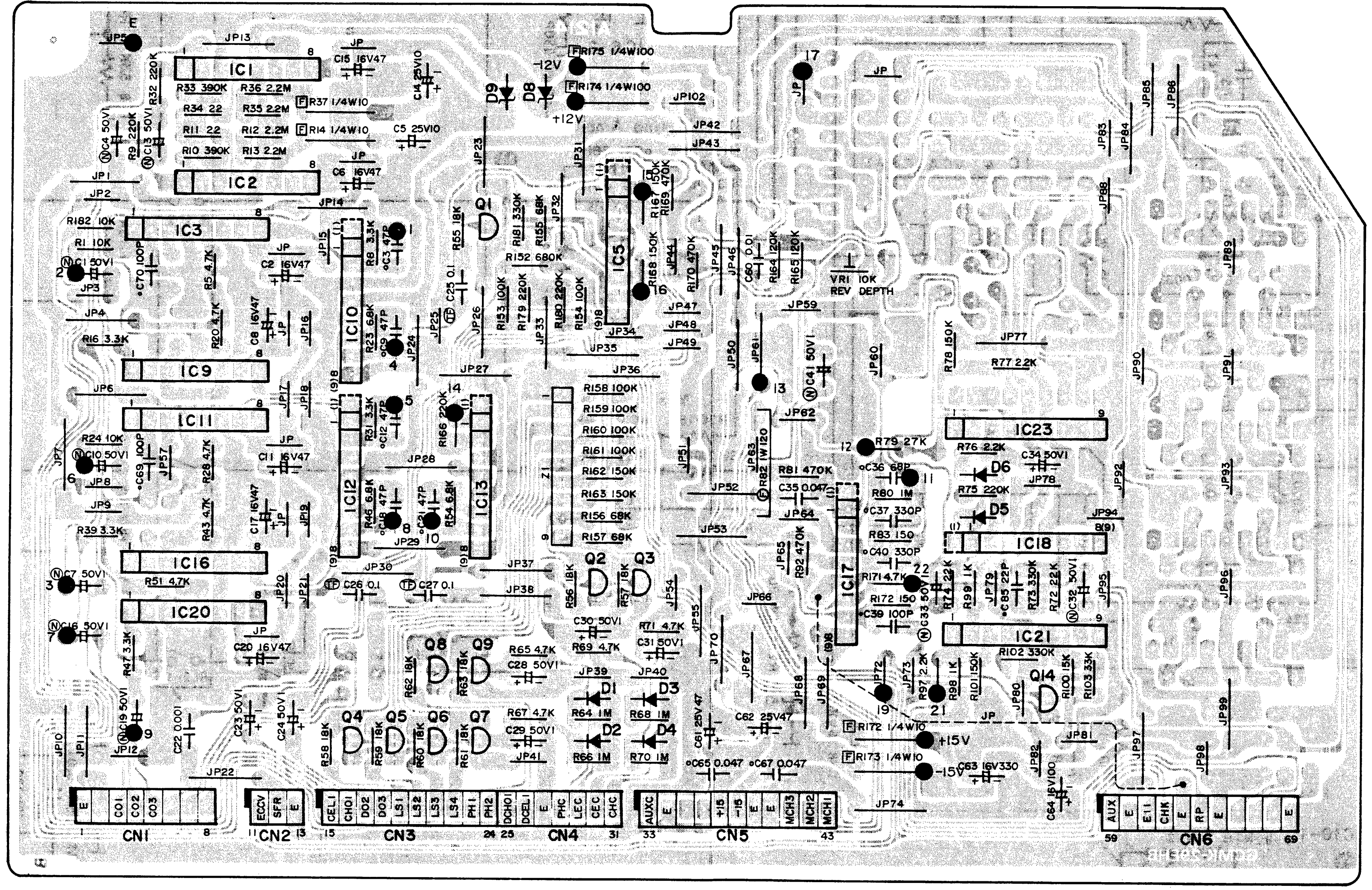
- Upper Tab.....Flute 8′ • Volume.....max
- Upper Key.....C4 • Celeste.....U. Tab ON

B

⑧



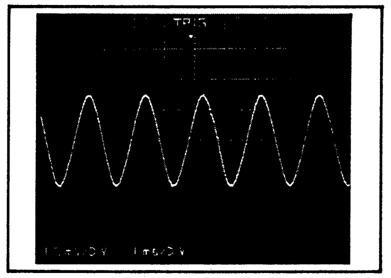
- Upper Tab.....Flute 8′ • Volume.....max
- Upper Key.....C4 • Celeste.....U. Tab ON


IC1
IC2
IC3
IC9
IC10
IC11
IC12
IC13
IC16
IC20
IC5
IC17
IC18
IC21
IC23
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q14
D1
D2
D3
D4
D5
D6
D8
D9
VR1 10K REV DEPTH
-12V
+12V
+15V
-15V
CN1
CN2
CN3
CN4
CN5
CN6

**SXPGA12142**

C

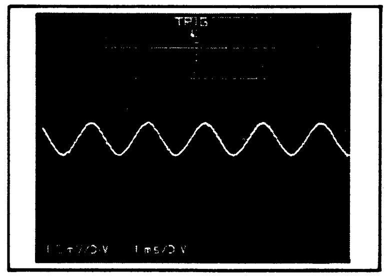
⑨



D

- Upper Tab.....Flute 8′ • Volume.....max
- Upper Key.....C4 • Celeste.....U. Tab ON

⑩

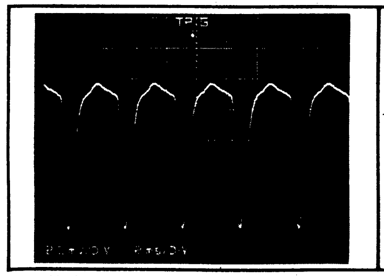


E

- Upper Tab.....Flute 8′ • Volume.....max
- Upper Key.....C4 • Celeste.....U. Tab ON

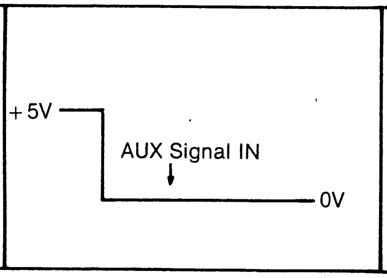
F

⑪, ⑬

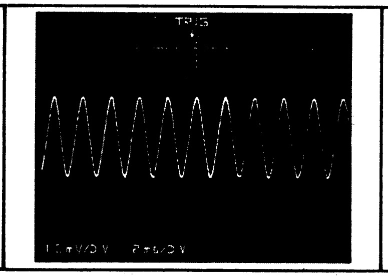


- U. Orchestral Presets .........Trombone
- Volume......max • Upper Key......C4
- Harmonic Control...............Center

⑫

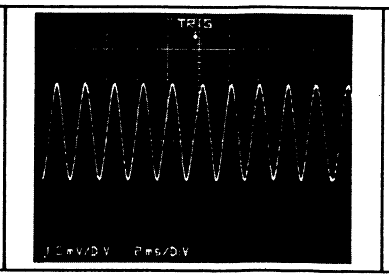

+5V
AUX Signal IN
0V

⑭



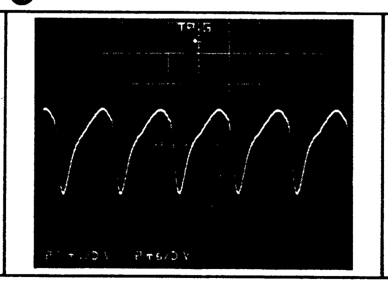
- Upper Tab.....Flute 8′ • Volume.....max
- Upper Key.....C4 • Celeste.....U. Tab ON

⑮



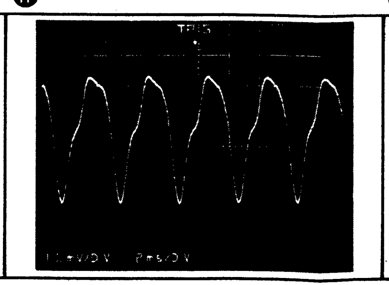
- Upper Tab......................Flute 8′
- Volume..........................max
- Upper Key.......................C4

⑯



- U. Orchestral Presets .........Trombone
- Volume......max • Upper Key......C4
- Harmonic Control...............Center

⑰



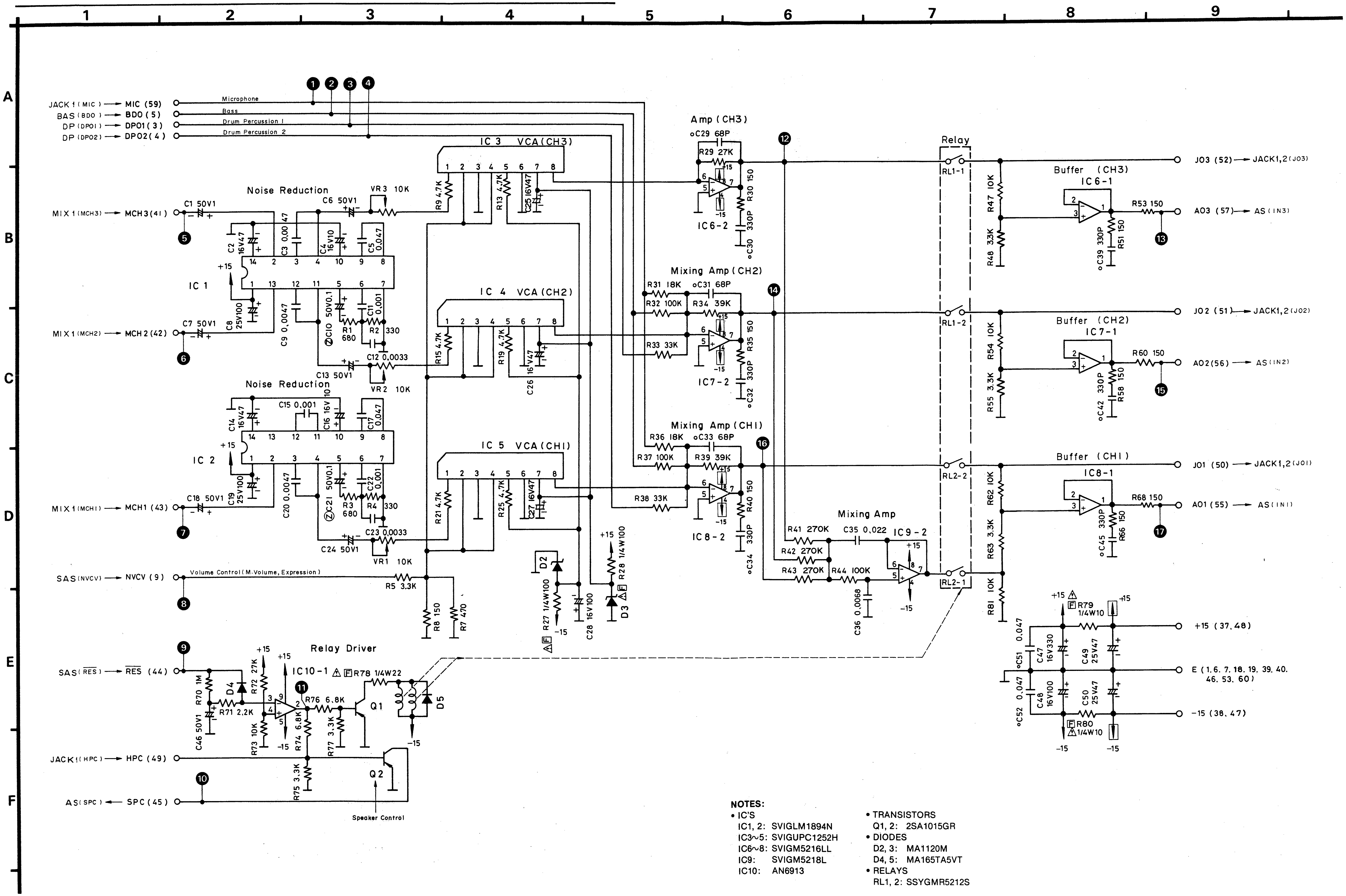
- U. Orchestral Presets..........Trombone
- Volume......max • Reverb Vol......max
- Harmonic Control...Center • Upper Key...C4

### ⑲ Reverb Volume Control

- Reverb Volume

step 1 ..................0V
step 2 ..................−2.9V
step 3 ..................−5.8V
step 4 ..................−11.6V

# MIXING 2 CIRCUIT DIAGRAM (MIX2)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
JACK 1 (MIC) → MIC (59)
BAS (BDO) → BDO (5)
DP (DPO1) → DPO1 (3)
DP (DPO2) → DPO2 (4)
Microphone
Bass
Drum Percussion 1
Drum Percussion 2
MIX 1 (MCH3) → MCH3 (41)
MIX 1 (MCH2) → MCH2 (42)
MIX 1 (MCH1) → MCH1 (43)
SAS (NVCV) → NVCV (9)
Volume Control (M.Volume, Expression)
SAS (RES) → RES (44)
JACK1 (HPC) → HPC (49)
AS (SPC) ← SPC (45)
Speaker Control
Noise Reduction
IC 1
IC 2
IC 3 VCA (CH3)
IC 4 VCA (CH2)
IC 5 VCA (CH1)
Amp (CH3)
IC6-2
Mixing Amp (CH2)
IC7-2
Mixing Amp (CH1)
IC8-2
Mixing Amp
IC9-2
Relay
RL1-1
RL1-2
RL2-2
RL2-1
Buffer (CH3)
IC6-1
Buffer (CH2)
IC7-1
Buffer (CH1)
IC8-1
Relay Driver
IC10-1
Q1
Q2
D2
D3
D4
D5
VR1 10K
VR2 10K
VR3 10K
R1 680
R2 330
R3 680
R4 330
R5 3.3K
R7 470
R8 150
R9 4.7K
R13 4.7K
R15 4.7K
R19 4.7K
R21 4.7K
R25 4.7K
R27 1/4W100
R28 1/4W100
R29 27K
R30 150
R31 18K
R32 100K
R33 33K
R34 39K
R35 150
R36 18K
R37 100K
R38 33K
R39 39K
R40 150
R41 270K
R42 270K
R43 270K
R44 100K
R47 10K
R48 3.3K
R51 150
R53 150
R54 10K
R55 3.3K
R58 150
R60 150
R62 10K
R63 3.3K
R66 150
R68 150
R70 1M
R71 2.2K
R72 27K
R73 10K
R74 6.8K
R75 3.3K
R76 6.8K
R77 3.3K
R78 1/4W22
R79 1/4W10
R80 1/4W10
R81 10K
C1 50V1
C2 16V47
C3 0.0047
C4 16V10
C5 0.047
C6 50V1
C7 50V1
C8 25V100
C9 0.0047
C10 50V0.1
C11 0.001
C12 0.0033
C13 50V1
C14 16V47
C15 0.001
C16 16V 10
C17 0.047
C18 50V1
C19 25V100
C20 0.0047
C21 50V0.1
C22 0.001
C23 0.0033
C24 50V1
C25 16V47
C26 16V47
C27 16V47
C28 16V100
C29 68P
C30 330P
C31 68P
C32 330P
C33 68P
C34 330P
C35 0.022
C36 0.0068
C39 330P
C42 330P
C45 330P
C46 50V1
C47 16V330
C48 16V100
C49 25V47
C50 25V47
C51 0.047
C52 0.047
+15
-15
JO3 (52) → JACK1,2 (JO3)
AO3 (57) → AS (IN3)
JO2 (51) → JACK1,2 (JO2)
AO2 (56) → AS (IN2)
JO1 (50) → JACK1,2 (JO1)
AO1 (55) → AS (IN1)
+15 (37, 48)
E (1, 6, 7, 18, 19, 39, 40, 46, 53, 60)
-15 (38, 47)
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰

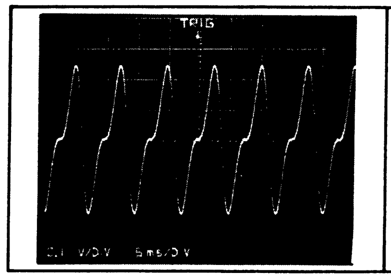
**NOTES:**

- IC'S
  - IC1, 2: SVIGLM1894N
  - IC3~5: SVIGUPC1252H
  - IC6~8: SVIGM5216LL
  - IC9: SVIGM5218L
  - IC10: AN6913
- TRANSISTORS
  - Q1, 2: 2SA1015GR
- DIODES
  - D2, 3: MA1120M
  - D4, 5: MA165TA5VT
- RELAYS
  - RL1, 2: SSYGMR5212S

# MIXING 2 CIRCUIT BOARD (MIX2)

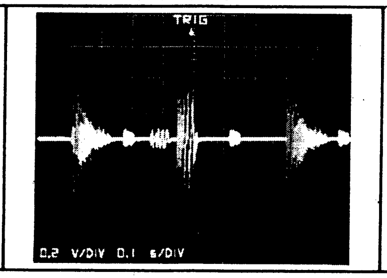
1 2 3 4 5 6 7 8 9

**❷ Bass**

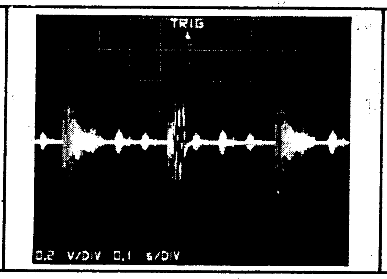


- Bass.....Bass 8′ • Pedal Key.....C2
- Main Vol, Pedal Vol, EXP.....Max

**❸ Drum Percussion 1**



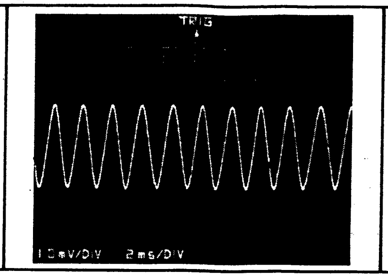
**❹ Drum Percussion 2**



(
- Rhythm SW.....16 beat • Arrange Percussion.....I
- Rhythm Vol, Main Vol, EXP.....max

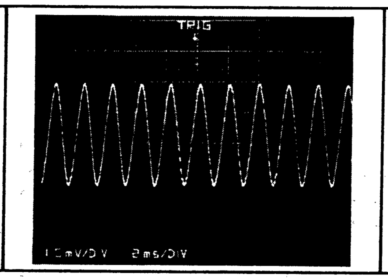
)

**❺**



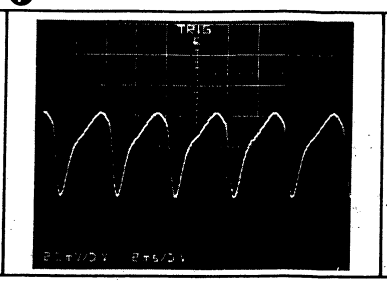
- Upper Tab.....Flute 8′ • Volume.....max
- Upper Key.....C4 • Celeste.....U. Tab ON

**❻**



- Upper Tab.....Flute 8′ • Volume.....max
- Upper Key.....C4

**❼**

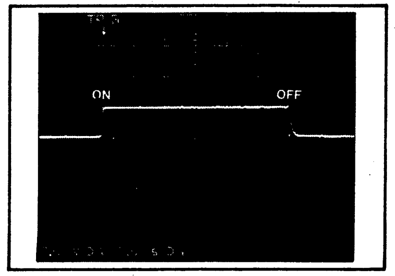


- U. Orchestral Presets...Trombone
- Volume....max • Upper Key....C4
- Harmonic Control ........Center

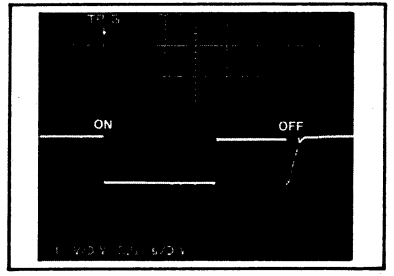
**❽ Main Vol, EXP Control**

- EXP Pedal...........max
- Main Volume Control
  - step 1..................−4.2V
  - step 2..................−2.9V
  - step 3..................−1.6V
  - step 4..................−0.3V
- Main Vol, EXP....Min: −12.6V

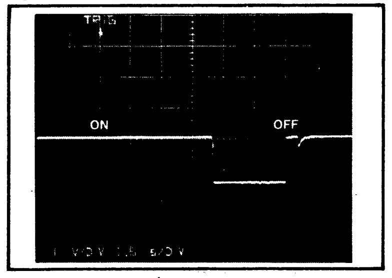
**❾ Power ON—OFF**

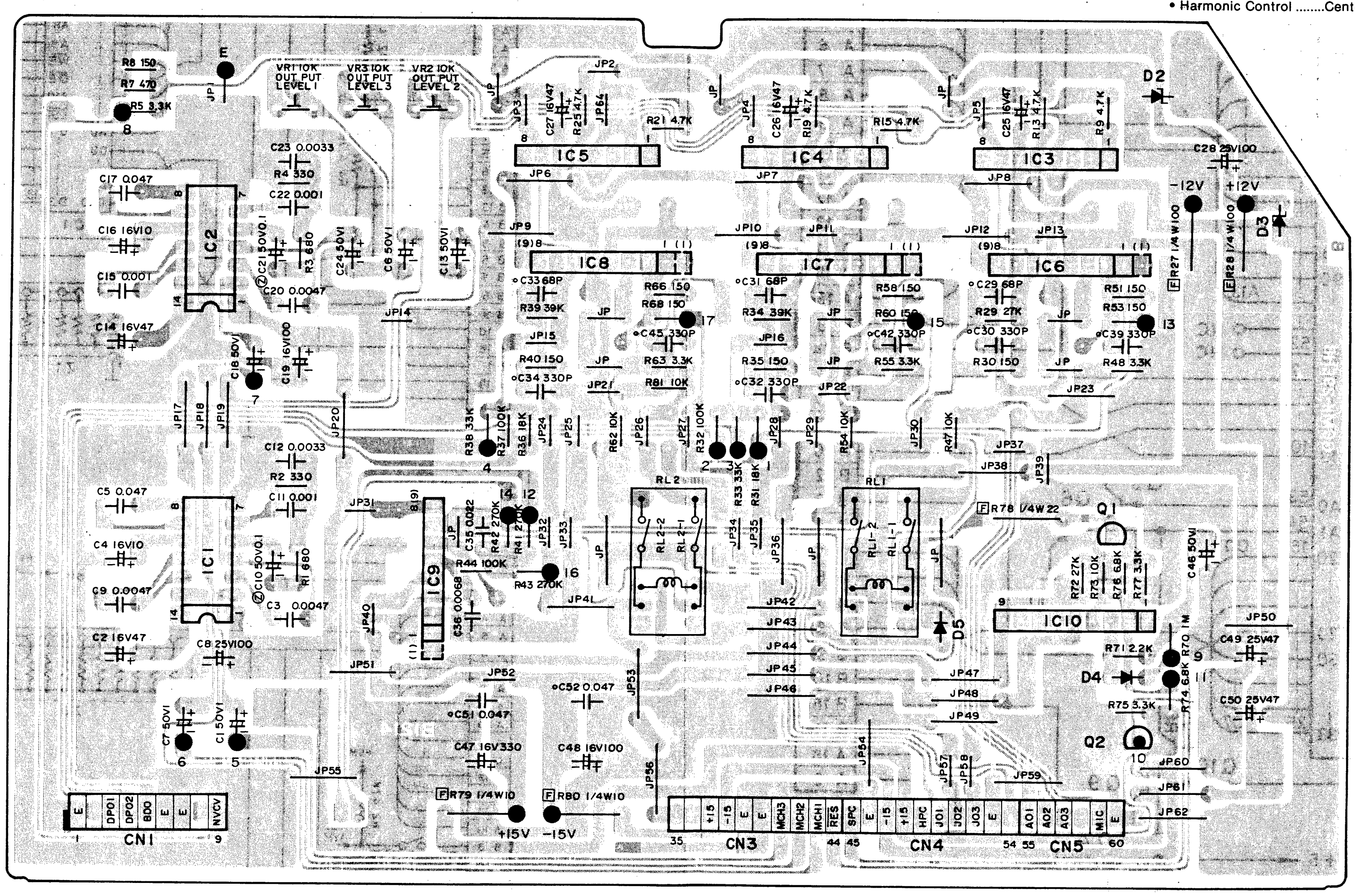


**❿ POEWR ON—OFF**



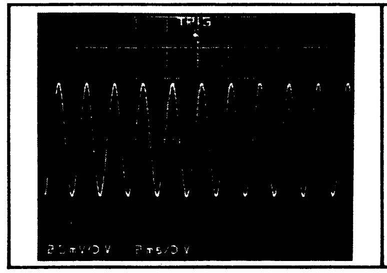
**⓫ POWER ON—OFF**



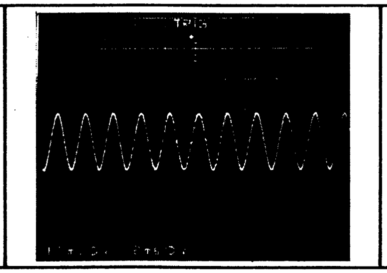

R8 150
R7 470
R5 3.3K
E
JP1
VR1 10K OUT PUT LEVEL 1
VR3 10K OUT PUT LEVEL 3
VR2 10K OUT PUT LEVEL 2
JP2
JP3
C27 16V47
R25 4.7K
JP64
R21 4.7K
JP4
C26 16V47
R19 4.7K
R15 4.7K
JP5
C25 16V47
R13 4.7K
R9 4.7K
D2
IC5
IC4
IC3
JP6
JP7
JP8
C28 25V100
−12V
+12V
D3
C23 0.0033
R4 330
C22 0.001
C17 0.047
C16 16V10
C15 0.001
C14 16V47
IC2
C21 50V0.1
R3 680
C20 0.0047
C24 50V1
C8 50V1
C13 50V1
JP9
JP10
JP11
JP12
JP13
IC8
IC7
IC6
C33 68P
R39 39K
R66 150
R68 150
C45 330P
R63 3.3K
R81 10K
C31 68P
R34 39K
R58 150
R60 150
C42 330P
R55 3.3K
C29 68P
R29 27K
R51 150
R53 150
C30 330P
C39 330P
R30 150
R48 3.3K
JP14
JP15
JP16
R40 150
R35 150
C34 330P
C32 330P
JP21
JP22
JP23
R27 1/4W100
R28 1/4W100
C18 50V1
C19 16V100
JP17
JP18
JP19
JP20
R38 33K
R37 100K
R36 18K
JP24
JP25
R62 10K
JP26
JP27
R32 100K
R33 33K
R31 18K
JP28
JP29
R54 10K
JP30
R47 10K
JP37
JP38
JP39
C12 0.0033
R2 330
C11 0.001
C5 0.047
C4 16V10
C9 0.0047
C2 16V47
IC1
C10 50V0.1
R1 680
C3 0.0047
C8 25V100
JP31
IC9
C35 0.022
R42 270K
R41 270K
JP32
JP33
R44 100K
R43 270K
C36 0.0068
JP40
JP41
RL2
RL2-2
RL2-1
RL1
RL1-2
RL1-1
JP34
JP35
JP36
JP42
JP43
JP44
JP45
JP46
D5
R78 1/4W22
Q1
C46 50V1
R72 27K
R73 10K
R76 6.8K
R77 3.3K
IC10
JP50
C49 25V47
R71 2.2K
R70 1M
D4
R74 6.8K
R75 3.3K
C50 25V47
Q2
JP47
JP48
JP49
JP51
JP52
C51 0.047
C52 0.047
JP53
C7 50V1
C1 50V1
C47 16V330
C48 16V100
JP55
JP56
JP54
JP57
JP58
JP59
JP60
JP61
JP62
R79 1/4W10
R80 1/4W10
+15V
−15V
E DP01 DP02 BD0 E E NVCV
CN1
1
9
+15 −15 E E MCH3 MCH2 MCH1 RES SPC E −15 +15 HPC J01 J02 J03 E A01 A02 A03 MIC E
35
CN3
44 45
CN4
54 55
CN5
60
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

**SXPGB12142**

**⓬**



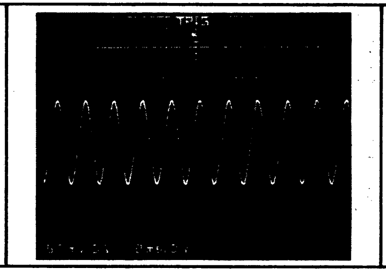
**⓭**



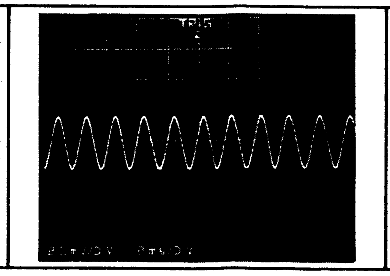
(
- Upper Tab......................Flute 8′
- Celeste.............................U. Tab ON
- Main Vol, EXP...............max
- Volume...........................max
- Upper Key.....................C4

)

**⓮**



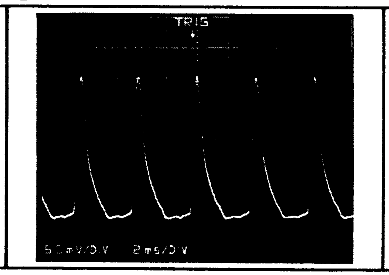
**⓯**



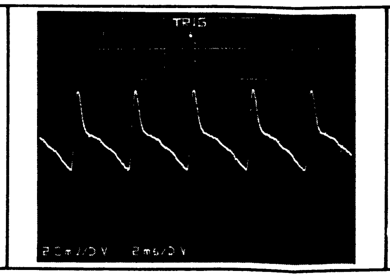
(
- Upper Tab......................Flute 8′
- Upper Key......................C4
- Volume...........................max
- Main Vol, EXP...............max

)

**⓰**



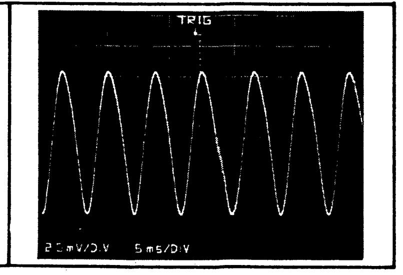
**⓱**



(
- Orchestral Presets.......Trombone
- Harmonic Control ........Center
- Main Vol, EXP...............max
- Volume...........................max
- Upper Key......................C4

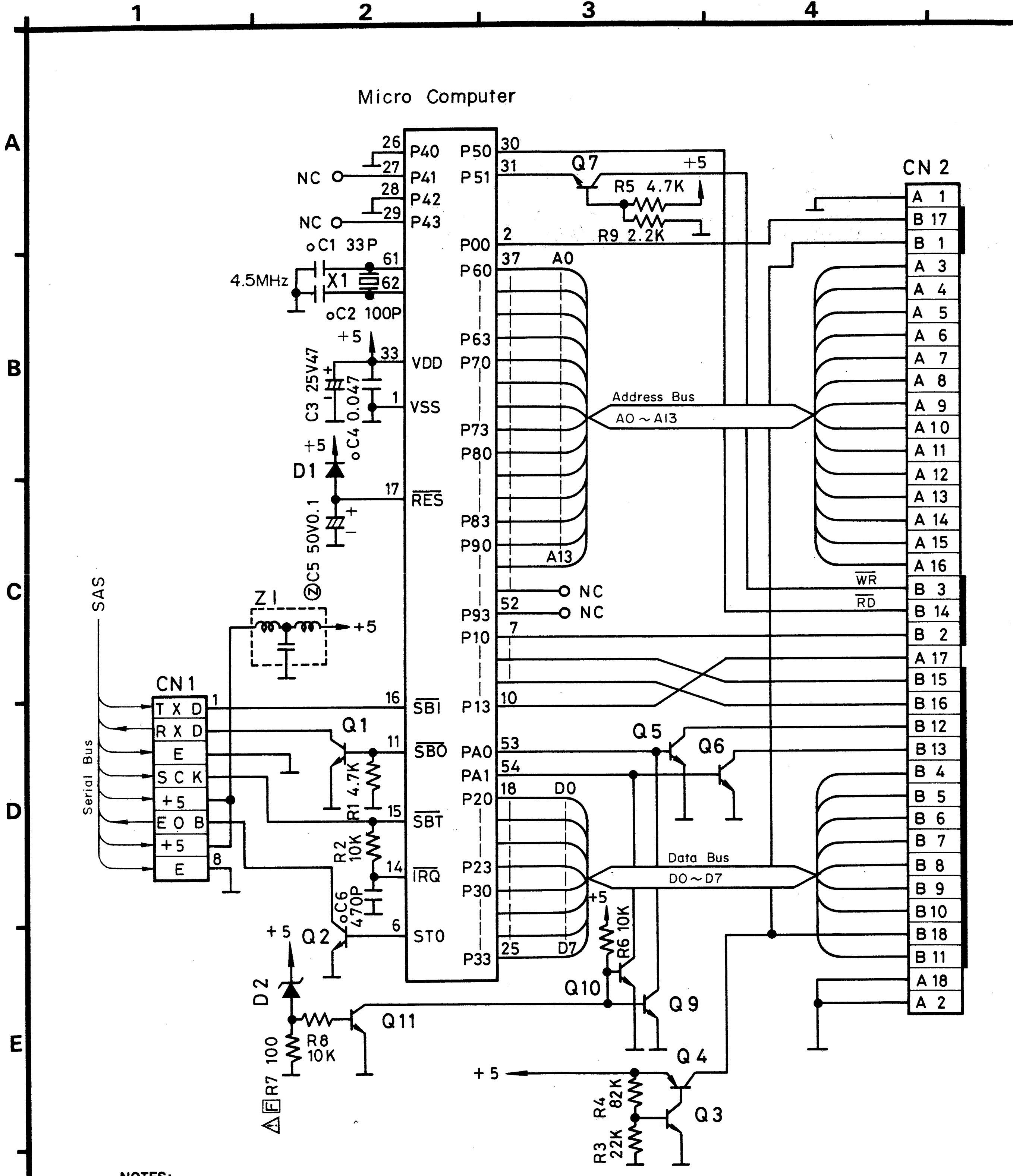
)

**IC9-2 Pin No. 7**



- Bass.....Bass 8′ • Pedal Key.....C2
- M. Vol, Bass Vol, EXP................max

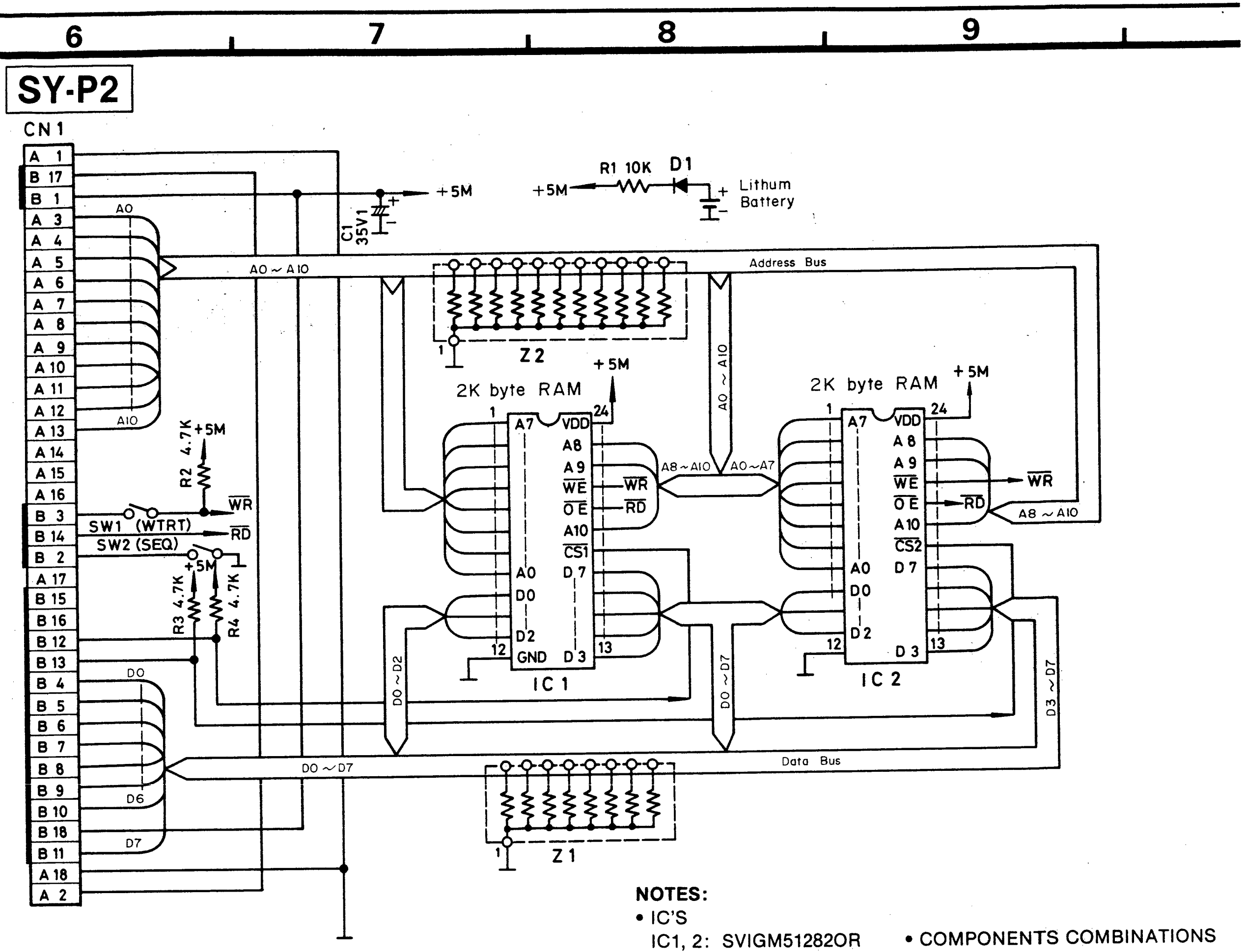
# MEMORY PACK CONTROL CIRCUIT DIAGRAM (MPC)


1
2
3
4
5
A
B
C
D
E
F
Micro Computer
P40
P41
P42
P43
P50
P51
P00
P60
P63
P70
P73
P80
P83
P90
P93
P10
P13
PA0
PA1
P20
P23
P30
P33
VDD
VSS
RES
SBI
SBO
SBT
IRQ
STO
NC
4.5MHz
C1 33P
X1
C2 100P
C3 25V47
C4 0.047
D1
C5 50V0.1
Z1
+5
SAS
Serial Bus
CN1
TXD
RXD
E
SCK
+5
EOB
+5
E
Q1
R1 4.7K
R2 10K
C6 470P
Q2
D2
R7 100
R8 10K
Q11
Q7
R5 4.7K
R9 2.2K
Address Bus
A0 ~ A13
A0
A13
Data Bus
D0 ~ D7
D0
D7
Q5
Q6
R6 10K
Q10
Q9
Q4
Q3
R4 82K
R3 22K
CN 2
A 1
B 17
B 1
A 3
A 4
A 5
A 6
A 7
A 8
A 9
A 10
A 11
A 12
A 13
A 14
A 15
A 16
B 3
B 14
B 2
A 17
B 15
B 16
B 12
B 13
B 4
B 5
B 6
B 7
B 8
B 9
B 10
B 18
B 11
A 18
A 2
WR
RD

**NOTES:**
- IC
  IC1: MN15621PGB
- TRANSISTORS
  Q1, 2, 7: 2SC1047C
  Q3, 5, 6, 9~11: 2SC2320LFG
  Q4: 2SA1015GR
- DIODES
  D1: MA165TA5VT
  D2: MA1036-H
- COMPONENT COMBINATION
  Z1: EXATA223S
- CERAMIC OSCILLATOR
  X1: EF0A4R5M01A

# MEMORY PACK CIRCUIT DIAGRAM (MP)

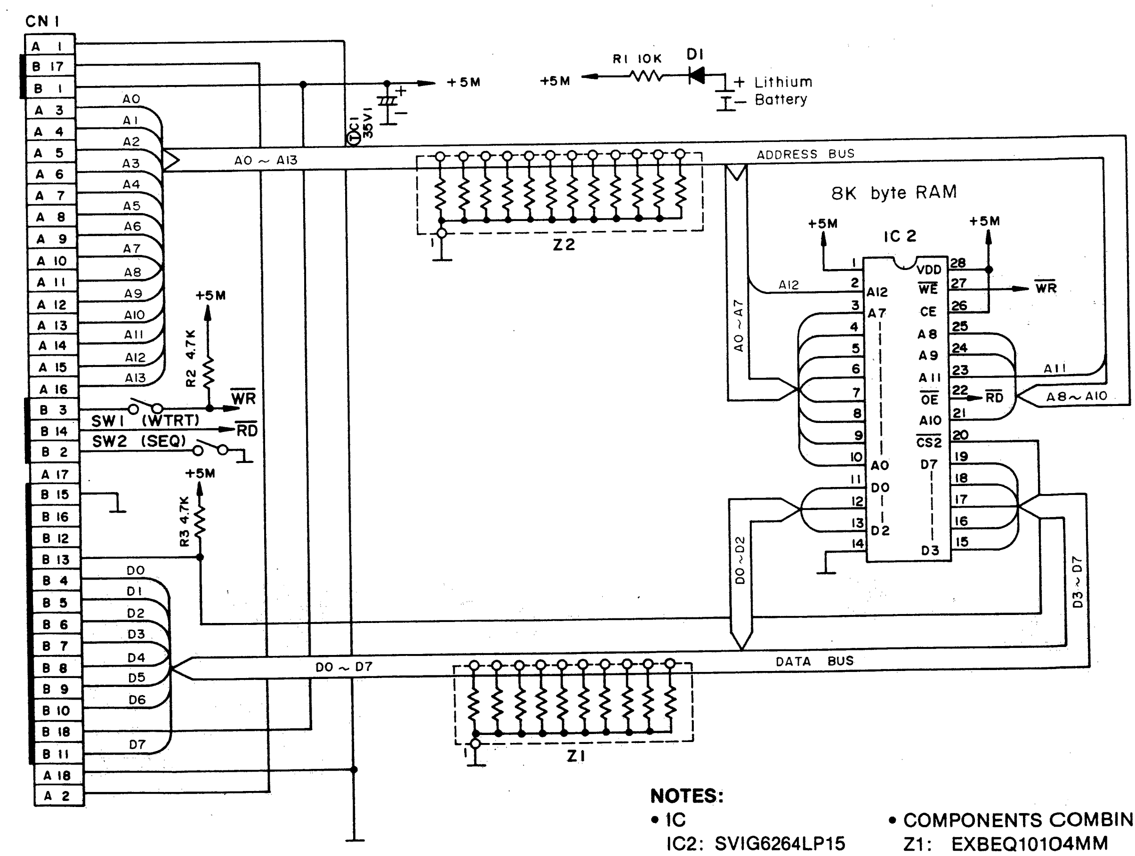
**SY-P2**


6
7
8
9
CN1
A 1
B 17
B 1
A 3
A 4
A 5
A 6
A 7
A 8
A 9
A 10
A 11
A 12
A 13
A 14
A 15
A 16
B 3
B 14
B 2
A 17
B 15
B 16
B 12
B 13
B 4
B 5
B 6
B 7
B 8
B 9
B 10
B 18
B 11
A 18
A 2
A0
A10
D0
D6
D7
C1 35V1
+5M
R1 10K
D1
Lithium Battery
A0 ~ A10
Address Bus
Z2
R2 4.7K
WR
RD
SW1 (WTRT)
SW2 (SEQ)
R3 4.7K
R4 4.7K
2K byte RAM
IC 1
IC 2
VDD
A8
A9
WE
OE
A10
CS1
CS2
D7
GND
D3
D2
A8 ~ A10
A0 ~ A7
D0 ~ D2
D3 ~ D7
D0 ~ D7
Data Bus
Z 1

NOTES:
- IC'S
  IC1, 2: SVIGM51282OR
- DIODE
  D1: MA165TA5VT

- COMPONENTS COMBINATIONS
  Z1, 2: EXBEQ10104MM

**SY-P3**


CN I
A 1
B 17
B 1
A 3
A 4
A 5
A 6
A 7
A 8
A 9
A 10
A 11
A 12
A 13
A 14
A 15
A 16
B 3
B 14
B 2
A 17
B 15
B 16
B 12
B 13
B 4
B 5
B 6
B 7
B 8
B 9
B 10
B 18
B 11
A 18
A 2
A0
A13
D0
D7
C1 35V1
+5M
R1 10K
D1
Lithium Battery
A0 ~ A13
ADDRESS BUS
Z2
8K byte RAM
IC 2
A12
A7
VDD
WE
CE
A8
A9
A11
OE
A10
CS2
D7
D3
D2
D0
WR
RD
A8 ~ A10
A0 ~ A7
R2 4.7K
SW1 (WTRT)
SW2 (SEQ)
R3 4.7K
D0 ~ D2
D3 ~ D7
D0 ~ D7
DATA BUS
Z1

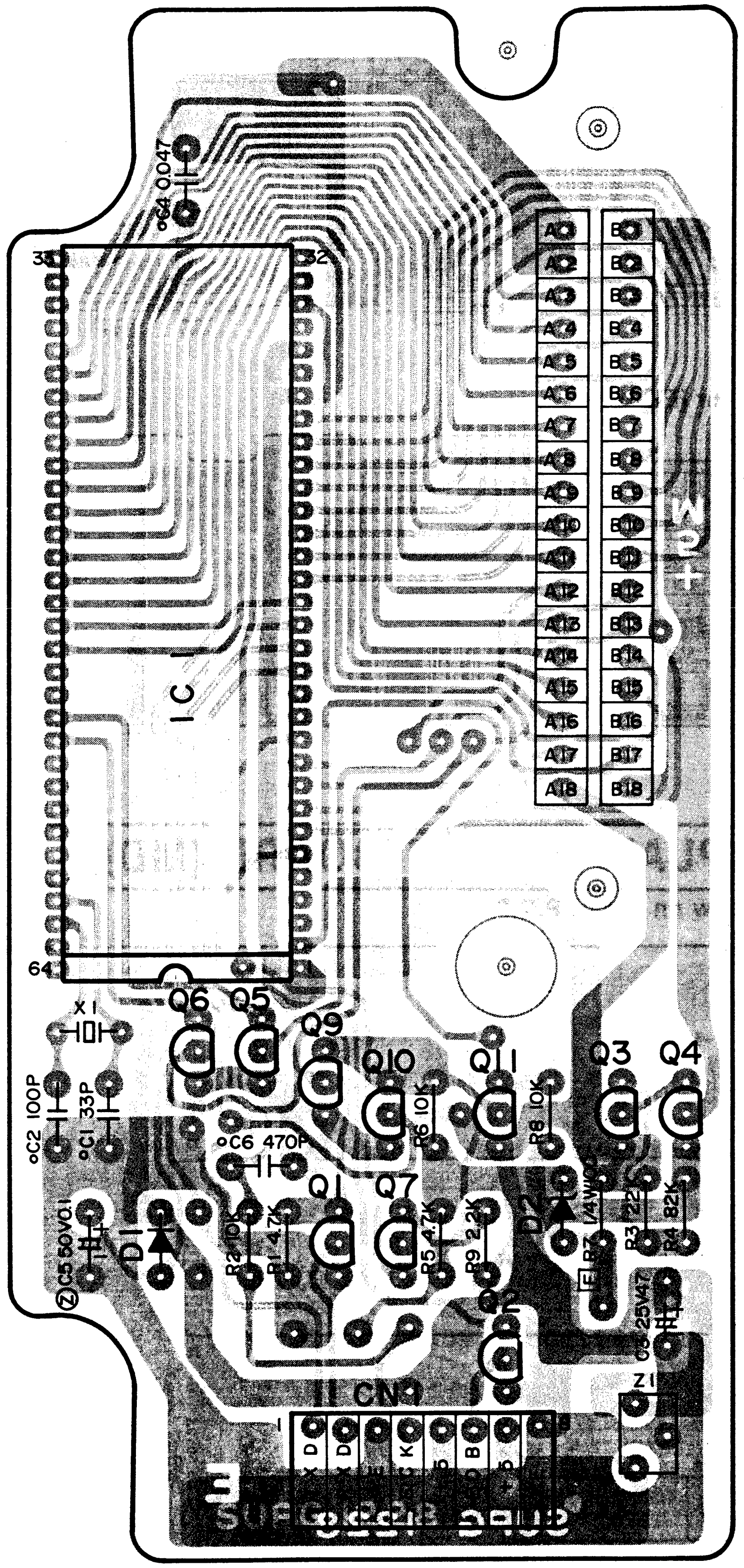
NOTES:
- IC
  IC2: SVIG6264LP15
- DIODE
  D1: MA165TA5VT

- COMPONENTS COMBINATIONS
  Z1: EXBEQ101O4MM
  Z2: EXBEQ121O4MM

# MEMORY PACK CONTROL CIRCUIT BOARD (MPC)

Circuit view on top of P.C.B.

**SXPG12281**


C4 0.047
33
32
64
IC
A0 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18
B0 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18
X1
Q6
Q5
Q9
Q10
Q11
Q3
Q4
C2 100P
C1 33P
C6 470P
R6 10K
R8 10K
Q1
Q7
D1
D2
C5 50V0.1
R2 10K
R1 4.7K
R5 4.7K
R9 2.2K
R3 22K
R4 82K
C3 25V47
Z1
CN1

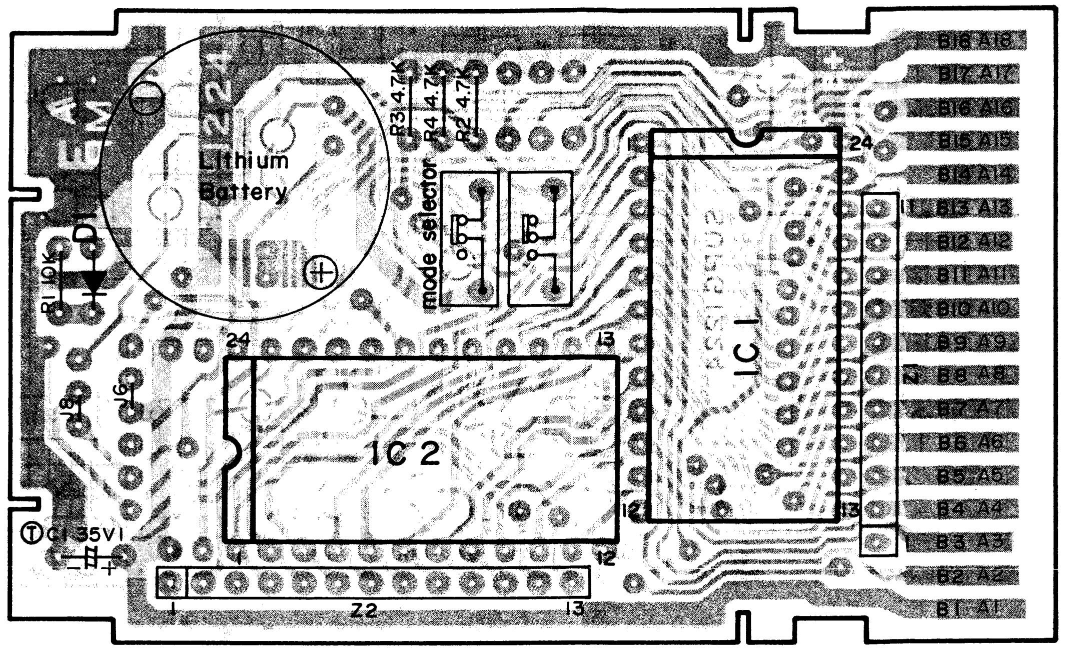
---

# MEMORY PACK CIRCUIT BOARD (MP)

Circuit view on top of P.C.B.

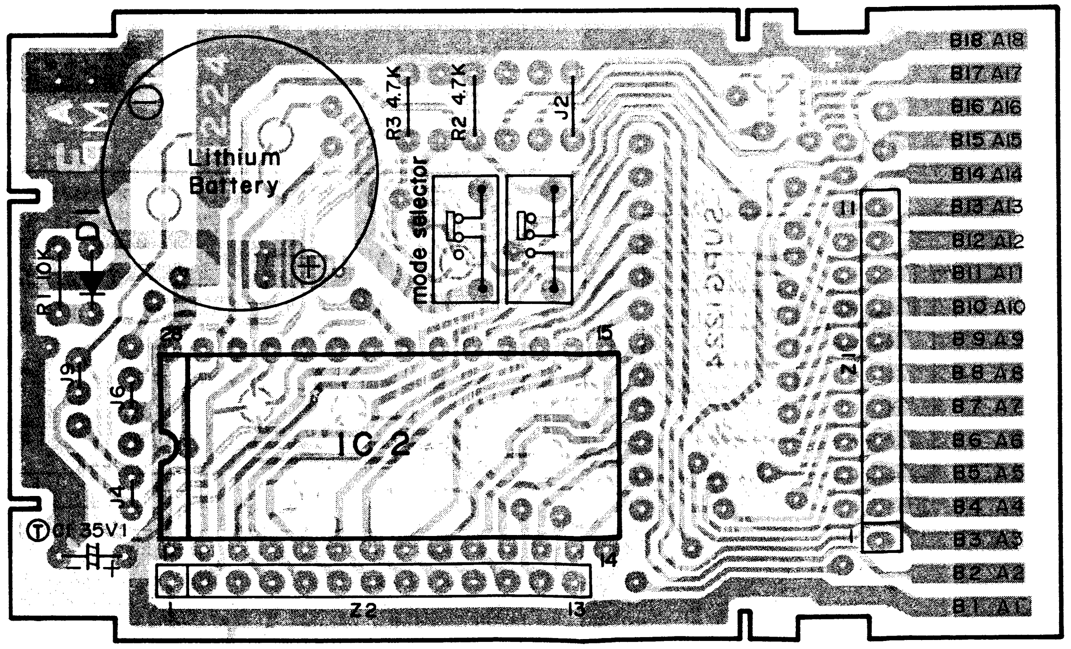
**SY-P2**

**SXPG12241**

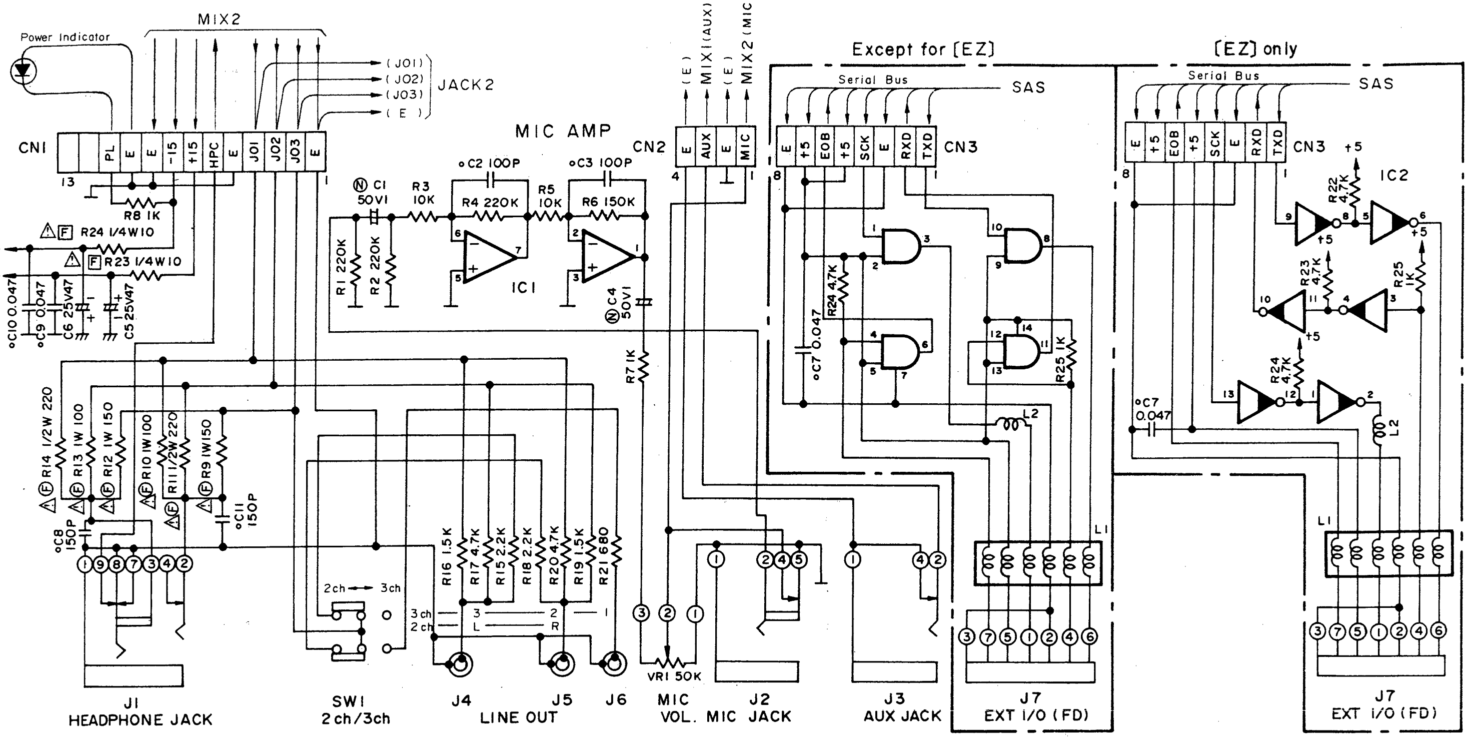

Lithium Battery
mode selector
R3 4.7K
R4 4.7K
R2 4.7K
R1 10K
D1
IC1
IC2
24
13
12
J1
J6
C1 35V1
Z2
B18 A18
B17 A17
B16 A16
B15 A15
B14 A14
B13 A13
B12 A12
B11 A11
B10 A10
B9 A9
B8 A8
B7 A7
B6 A6
B5 A5
B4 A4
B3 A3
B2 A2
B1 A1

**SY-P3**

**SXPG12242**


Lithium Battery
mode selector
R3 4.7K
R2 4.7K
J2
R1 10K
D1
IC2
28
15
14
J1
J6
J4
C1 35V1
Z1
Z2
B18 A18
B17 A17
B16 A16
B15 A15
B14 A14
B13 A13
B12 A12
B11 A11
B10 A10
B9 A9
B8 A8
B7 A7
B6 A6
B5 A5
B4 A4
B3 A3
B2 A2
B1 A1

## JACK 1 CIRCUIT DIAGRAM (JACK 1)

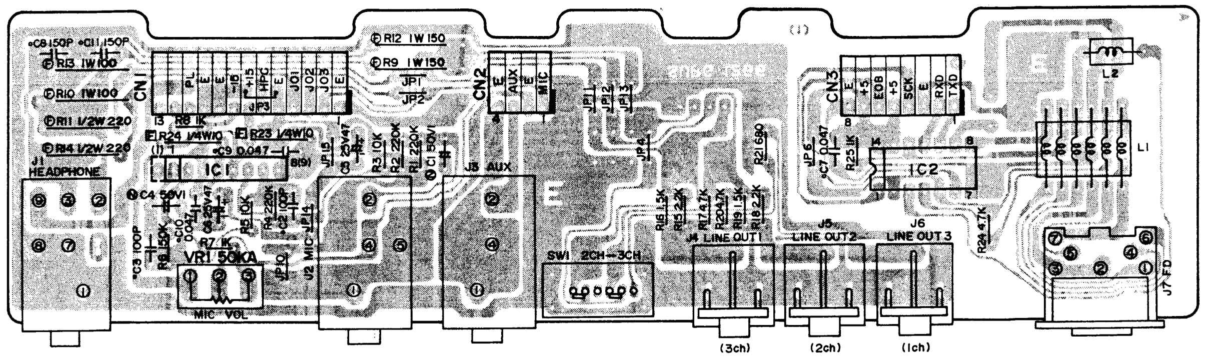

Power indicator
MIX2
(J01)
(J02)
(J03)
(E)
JACK2
CN1
PL
E
-15
+15
HPC
J01
J02
J03
R8 1K
R24 1/4W10
R23 1/4W10
C10 0.047
C9 0.047
C6 25V47
C5 25V47
MIC AMP
C1 50V1
R3 10K
C2 100P
R4 220K
R5 10K
C3 100P
R6 150K
R1 220K
R2 220K
IC1
C4 50V1
R7 1K
CN2
AUX
MIC
MIX1 (AUX)
MIX2 (MIC)
Except for [EZ]
Serial Bus
SAS
CN3
+5
EOB
SCK
RXD
TXD
C7 0.047
R25 1K
L1
L2
[EZ] only
IC2
R22 4.7K
R23 4.7K
R24 4.7K
R14 1/2W 220
R13 1W 100
R12 1W 150
R10 1W100
R11 1/2W 220
R9 1W150
C11 150P
C8 150P
R16 1.5K
R17 4.7K
R15 2.2K
R18 2.2K
R20 4.7K
R19 1.5K
R21 680
2ch 3ch
J1
HEADPHONE JACK
SW1
2ch/3ch
J4
J5
LINE OUT
J6
MIC
VOL.
VR1 50K
J2
MIC JACK
J3
AUX JACK
J7
EXT I/O (FD)

**NOTE:**

- IC'S
  - IC1: SVIGM5218L (SVIGNJM4558S)
  - IC2: SVIGM74LS09
  - EZ IC2: SVIGM74LS05
- COILS
  - L1: SLQG13W6D1
  - L2: SLQG80W13A

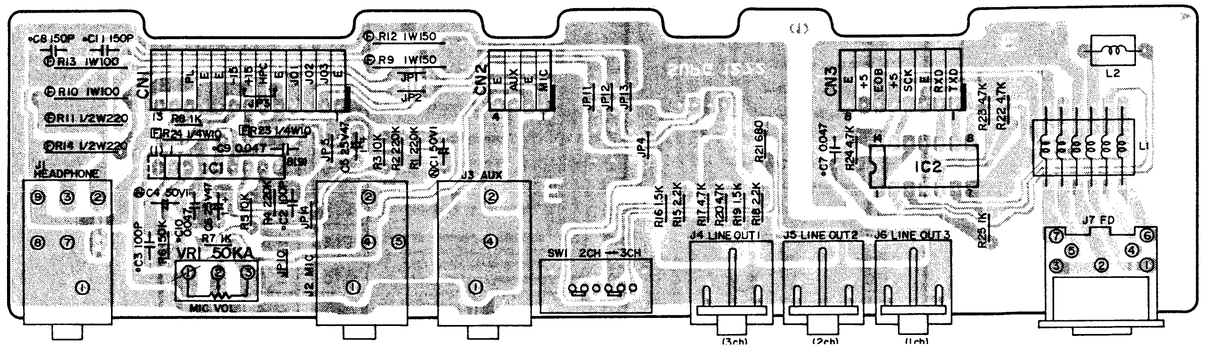
## JACK 1 CIRCUIT BOARD (JACK 1)

**SXPG12667**


CN1
CN2
CN3
IC1
IC2
L1
L2
J1 HEADPHONE
VR1 50KA
MIC VOL
J2 MIC
J3 AUX
SW1 2CH→3CH
J4 LINE OUT1
J5 LINE OUT2
J6 LINE OUT3
J7 FD
(3ch)
(2ch)
(1ch)

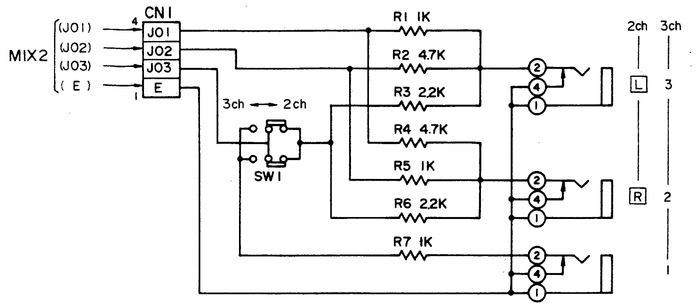
■ **Products for [EZ] only**

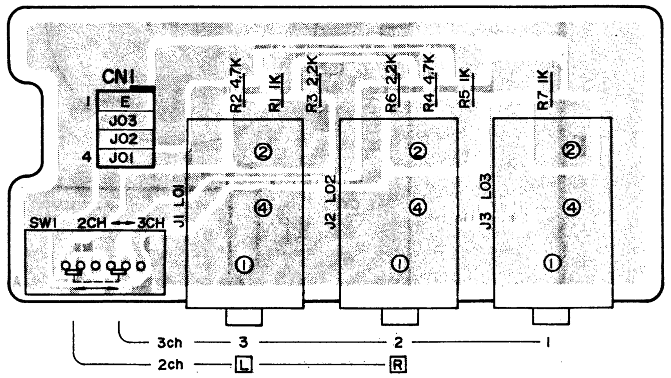
**SXPG12723**


CN1
CN2
CN3
IC1
IC2
L1
L2
J1 HEADPHONE
VR1 50KA
MIC VOL
J2 MIC
J3 AUX
SW1 2CH→3CH
J4 LINE OUT1
J5 LINE OUT2
J6 LINE OUT3
J7 FD
(3ch)
(2ch)
(1ch)

## JACK 2 CIRCUIT (JACK 2)

**SXPG12161**

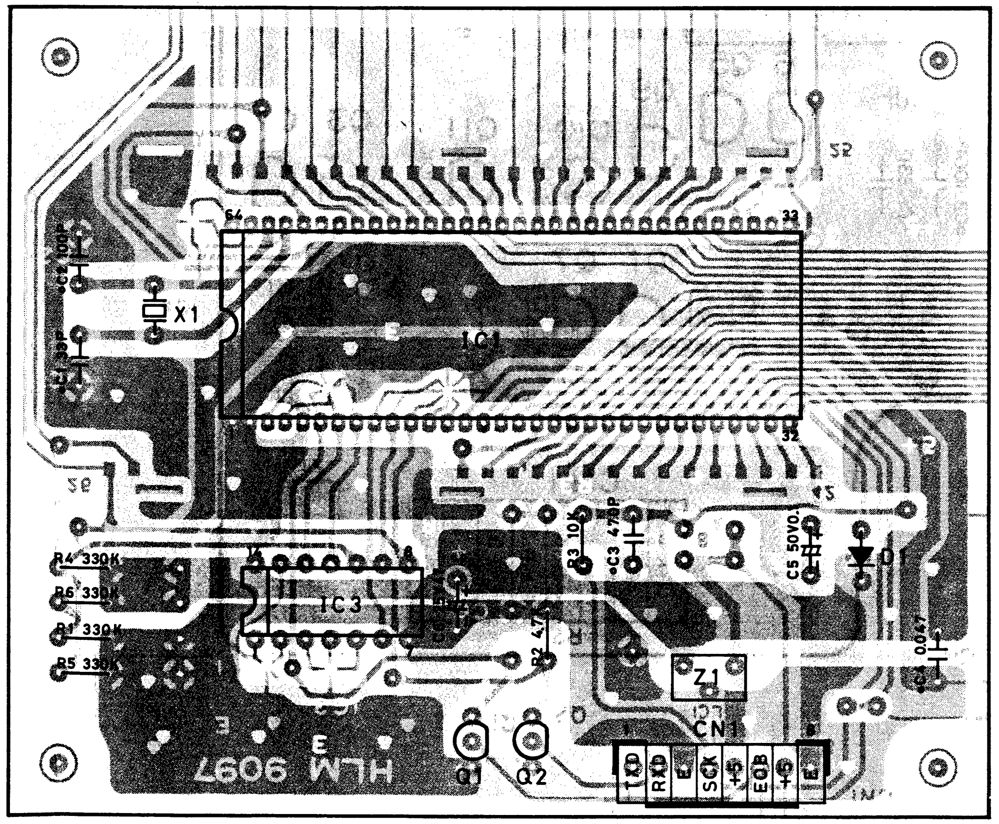

CN1
MIX2
(J01)
(J02)
(J03)
(E)
J01
J02
J03
E
R1 1K
R2 4.7K
R3 2.2K
R4 4.7K
R5 1K
R6 2.2K
R7 1K
3ch → 2ch
SW1
2ch 3ch
L 3
R 2
1


CN1
E
J03
J02
J01
R2 4.7K
R1 1K
R3 2.2K
R6 2.2K
R4 4.7K
R5 1K
R7 1K
SW1 2CH→3CH
J1 LO1
J2 LO2
J3 LO3
3ch 3 2 1
2ch L R

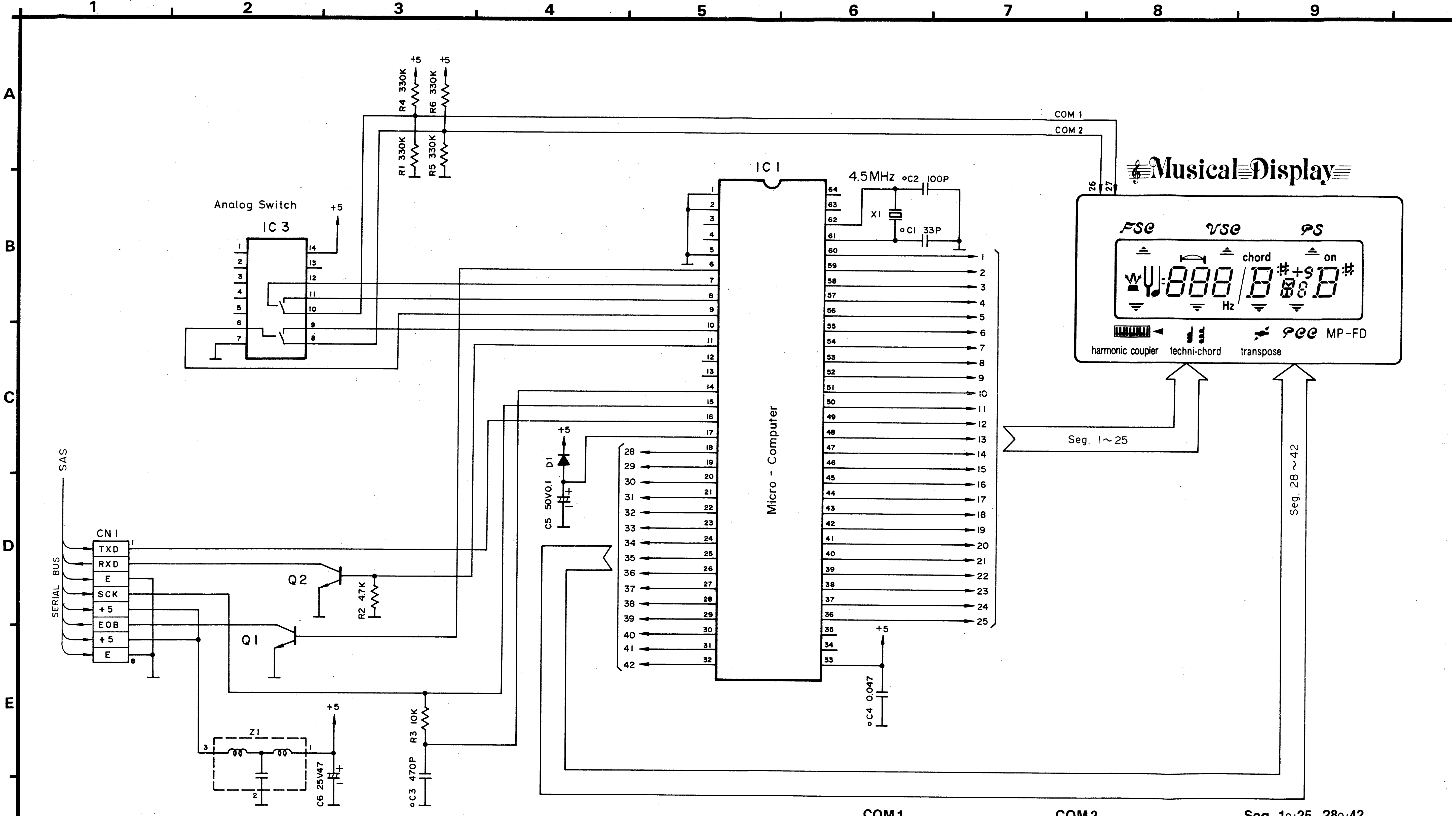
## MUSICAL DISPLAY CIRCUIT BOARD (MD)

**Circuit view on top of P.C.B.**

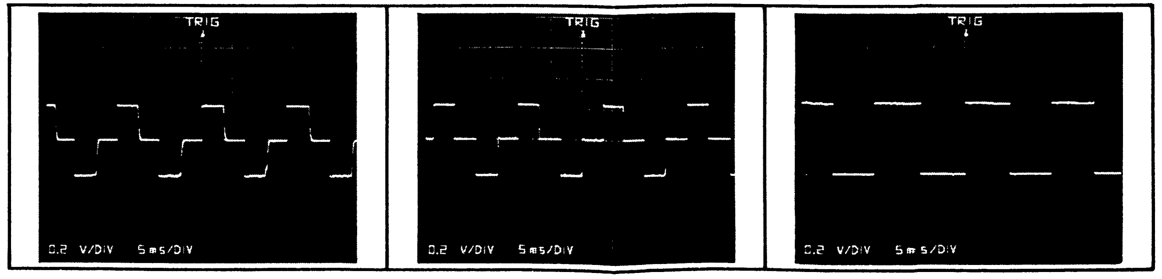
**SXEG21A**


X1
IC1
IC3
R4 330K
R6 330K
R1 330K
R5 330K
R3 10K
C3 47P
C5 50V0.1
C4 0.047
D1
Z1
CN1
Q1
Q2
TXD
RXD
E
SCK
+5
EOB
+5
E
HLM 9097

# MUSICAL DISPLAY CIRCUIT DIAGRAM (MD)

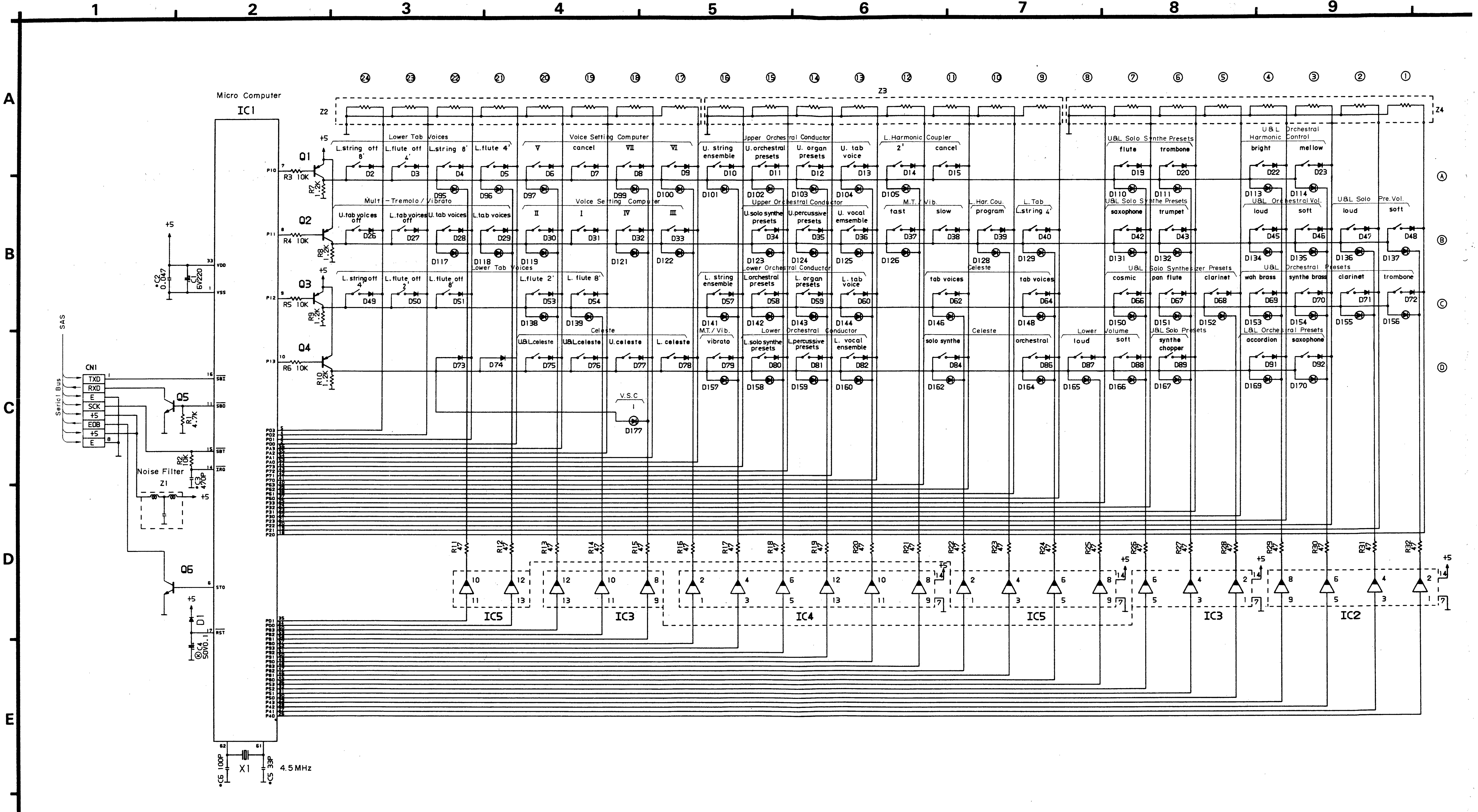

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
+5
R4 330K
R6 330K
R1 330K
R5 330K
COM 1
COM 2
IC 1
4.5MHz
C2 100P
X1
C1 33P
Analog Switch
IC 3
Micro - Computer
Musical Display
FSC
VSC
PS
chord
on
Hz
harmonic coupler
techni-chord
transpose
MP-FD
Seg. 1~25
Seg. 28~42
D1
C5 50V0.1
SAS
SERIAL BUS
CN1
TXD
RXD
E
SCK
+5
EOB
+5
E
Q2
Q1
R2 4.7K
Z1
C6 25V47
R3 10K
C3 470P
C4 0.047

**COM 1** **COM 2** **Seg. 1~25, 28~42**



NOTES:
- IC'S
  IC1: MN15621PGA
  IC3: SVIGUPD4066B
- TRANSISTORS
  Q1: 2SC1685R
  Q2: 2SC1047C
- DIODE
  D1: MA165TA5VT
- COMPONENTS COMBINATION
  Z1: EXATA223S
- CERAMIC OSCILLATORS
  X1: EF0A4R5M01A

# U. CONTROL PANEL RIGHT CIRCUIT DIAGRAM(CPR)

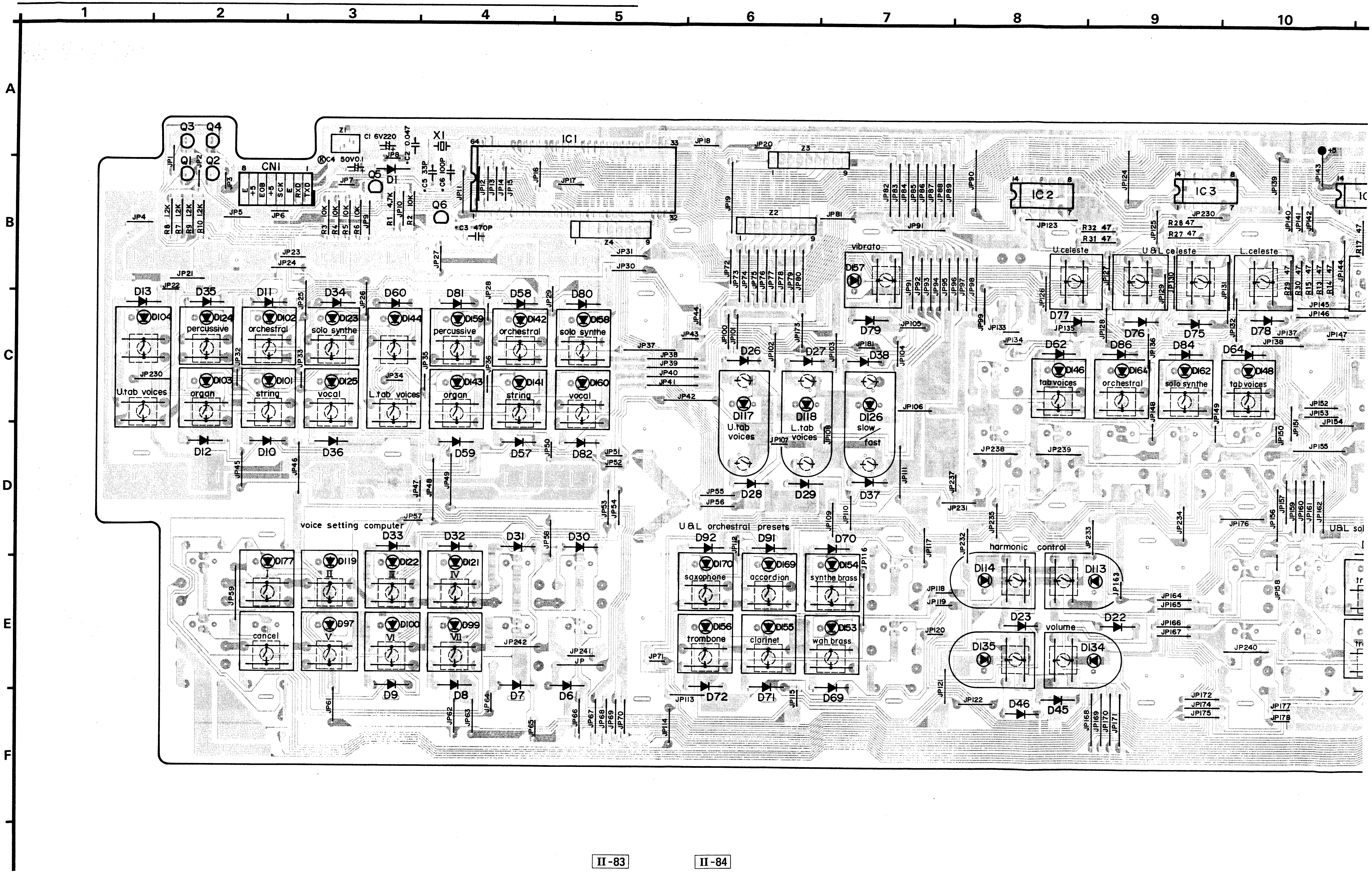

1
2
3
4
5
6
7
8
9
A
B
C
D
E
Micro Computer
IC1
Q1
Q2
Q3
Q4
Q5
Q6
CN1
Serial Bus
SAS
TXD
RXD
E
SCK
+5
EOB
+5
E
Noise Filter
Z1
Z2
Z3
Z4
IC2
IC3
IC4
IC5
X1
4.5MHz
C5 100P
C5 33P
+5
R3 10K
R4 10K
R5 10K
R6 10K
Lower Tab Voices
L.string off 8'
L.flute off 4'
L.string 8'
L.flute 4'
Voice Setting Computer
V
cancel
VII
VI
U. string ensemble
Upper Orchestral Conductor
U. orchestral presets
U. organ presets
U. tab voice
L. Harmonic Coupler
2'
cancel
U&L Solo Synthe Presets
flute
trombone
U&L Orchestral Harmonic Control
bright
mellow
Mult - Tremolo / Vibrato
U.tab voices off
L.tab voices off
U. tab voices
L.tab voices
II
I
IV
III
U.solo synthe presets
U.percussive presets
U. vocal ensemble
M.T. / Vib.
fast
slow
Har. Cou.
program
L. Tab
L.string 4'
saxophone
trumpet
U&L Orchestral Vol.
loud
soft
U&L Solo Pre.Vol
loud
soft
L. string off 4'
L.flute off 2'
L.flute off 8'
L.flute 2'
L. flute 8'
Lower Orchestral Conductor
L. string ensemble
L.orchestral presets
L. organ presets
L. tab voice
tab voices
Celeste
U&L Solo Synthesizer Presets
cosmic
pan flute
clarinet
U&L Orchestral Presets
wah brass
synthe brass
clarinet
trombone
U&L celeste
U&L celeste
U.celeste
L. celeste
vibrato
L.solo synthe presets
L.percussive presets
L. vocal ensemble
solo synthe
orchestral
Lower Volume
loud
soft
synthe chopper
L&L Orchestral Presets
accordion
saxophone
V.S.C
I
D177
4.5MHz

NOTES:
- IC'S
  - IC1: MN15621PGA
  - IC2~5: SVIGM53217
- TRANSISTORS
  - Q1~4: 2SA830B
  - Q5, 6: 2SC1047C

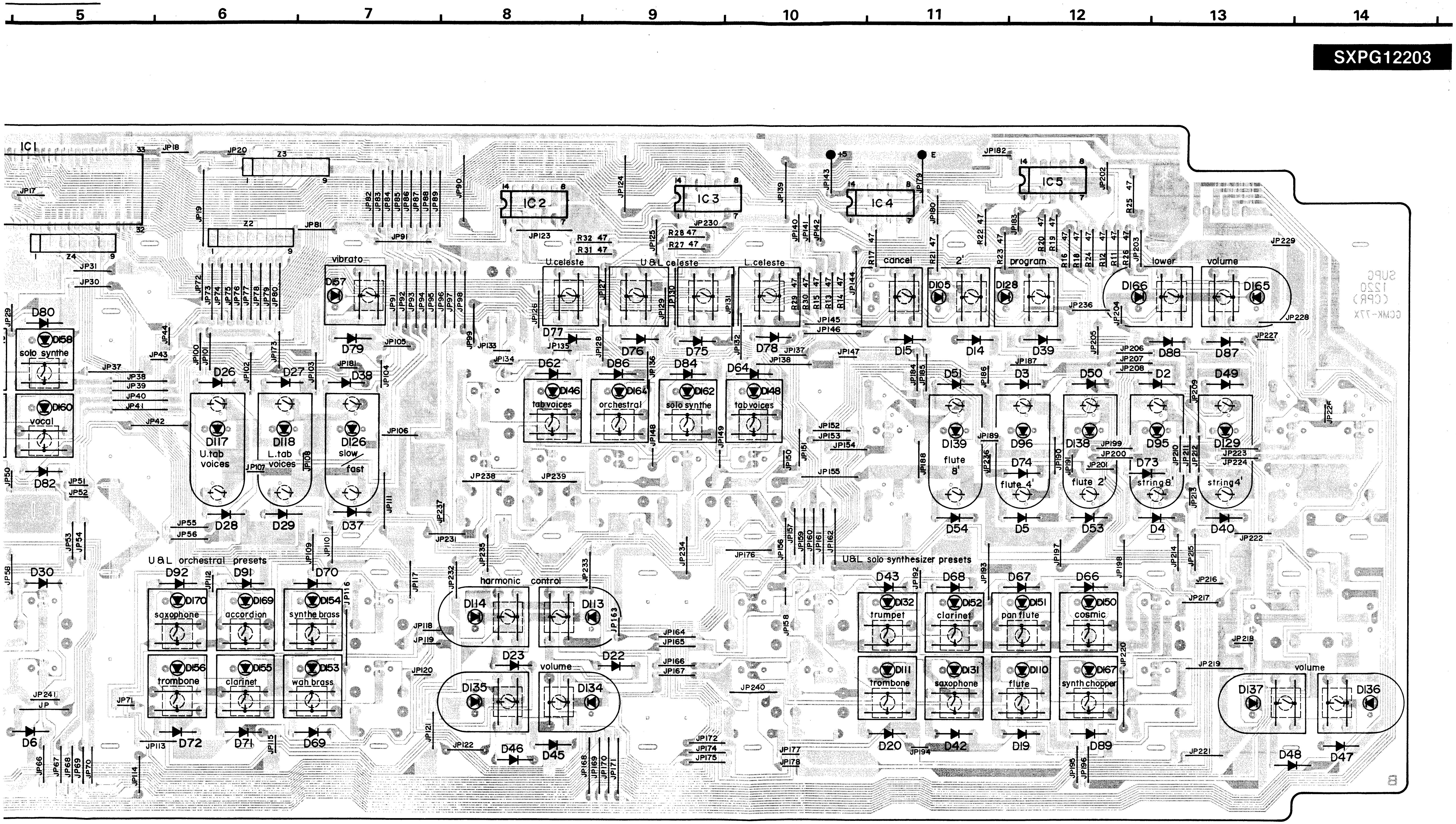
- DIODES
  - D1~15, 19, 20, 22, 23, 26~40, 42, 43, 45~51, 53, 54, 57~60, 62, 64, 66~82, 84, 86~89, 91, 92: MA150IR
  - D95, 96,101~105, 110, 111, 113, 114, 117, 118, 123~126, 129, 131, 132, 134~139, 141~144, 146, 148, 150~160, 162, 164~167, 169, 170: SEL2210SLFM1 (Red)
  - D97, 99, 100, 119, 121, 122, 128, 177: SEL2710KLFM1 (Yellow)

- COMPONENTS COMBINATIONS
  - Z1: EXATA223S
  - Z2~4: EXBP88122MM
- CERAMIC OSCILLATOR
  - X1: EF0A4R5M01A

## U. CONTROL PANEL RIGHT CIRCUIT BOARD (CPR)



1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
Q3
Q4
Q1
Q2
CN1
E08
+5
SCK
E
RXD
TXD
Z1
C1 6V220
C4 50V0.1
C2 0.047
X1
IC1
D5
D1
C5 33P
C6 100P
Q6
C3 470P
R8 1.2K
R7 1.2K
R9 1.2K
R10 1.2K
R3 10K
R4 10K
R5 10K
R6 10K
R1 4.7K
R2 10K
Z2
Z3
Z4
IC2
IC3
R32 47
R31 47
R28 47
R27 47
+5
vibrato
U.celeste
U & L celeste
L.celeste
U.tab voices
percussive
organ
orchestral
string
solo synthe
vocal
L.tab voices
U.tab voices
L.tab voices
slow
fast
tab voices
voice setting computer
I
II
III
IV
V
VI
VII
cancel
U&L orchestral presets
saxophone
accordion
synthe brass
trombone
clarinet
wah brass
harmonic control
volume
U&L sol


5
6
7
8
9
10
11
12
13
14
SXPG12203
IC1
IC2
IC3
IC4
IC5
Z2
Z3
Z4
+5
E
vibrato
U.celeste
U&L celeste
L.celeste
cancel
2'
program
lower
volume
solo synthe
vocal
U.tab voices
L.tab voices
slow / fast
tab voices
orchestral
solo synthe
tab voices
flute 8'
flute 4'
flute 2'
string 8'
string 4'
U&L orchestral presets
saxophone
accordion
synthe brass
trombone
clarinet
wah brass
harmonic control
volume
U&L solo synthesizer presets
trumpet
clarinet
pan flute
cosmic
trombone
saxophone
flute
synth chopper
volume
R32 47
R31 47
R28 47
R27 47
R17 47
R21 47
R22 47
R23 47
R20 47
R19 47
R16 47
R18 47
R24 47
R12 47
R11 47
R26 47
R25 47
R29 47
R30 47
R13 47
R15 47
R14 47
SUPG 1220 (CPR) GCMK-77X
D80
D158
D160
D82
D26
D27
D38
D117
D118
D126
D28
D29
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D57
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D75
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D86
D84
D64
D146
D164
D162
D148
D15
D14
D39
D105
D128
D166
D165
D88
D87
D51
D3
D50
D2
D49
D139
D96
D138
D95
D129
D74
D73
D54
D5
D53
D4
D40
D30
D92
D91
D70
D170
D169
D154
D156
D155
D153
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D71
D69
D6
D114
D113
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D135
D134
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D45
D43
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D67
D66
D132
D152
D151
D150
D111
D131
D110
D167
D20
D42
D19
D89
D137
D136
D48
D47
JP17
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JP202
JP203
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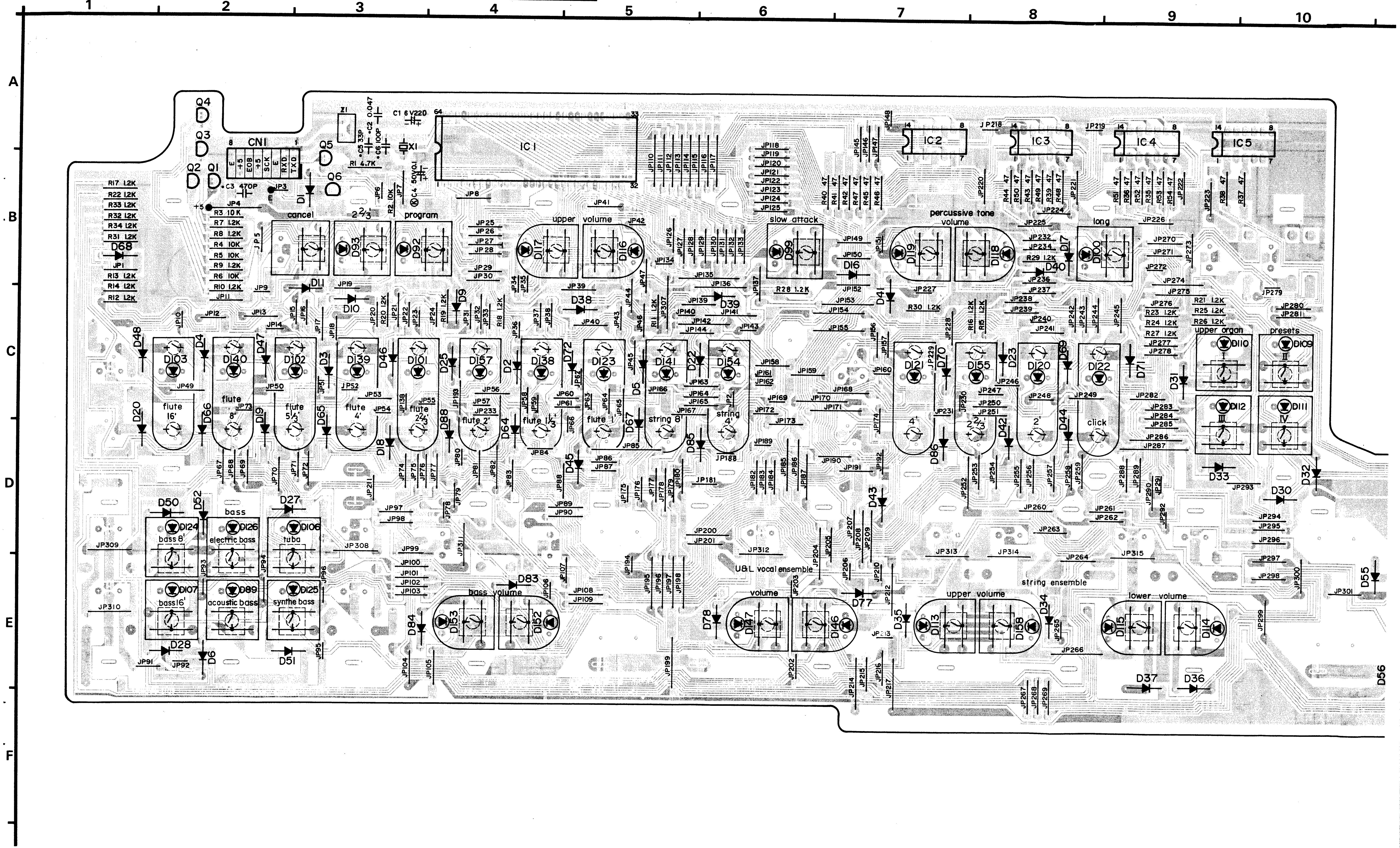
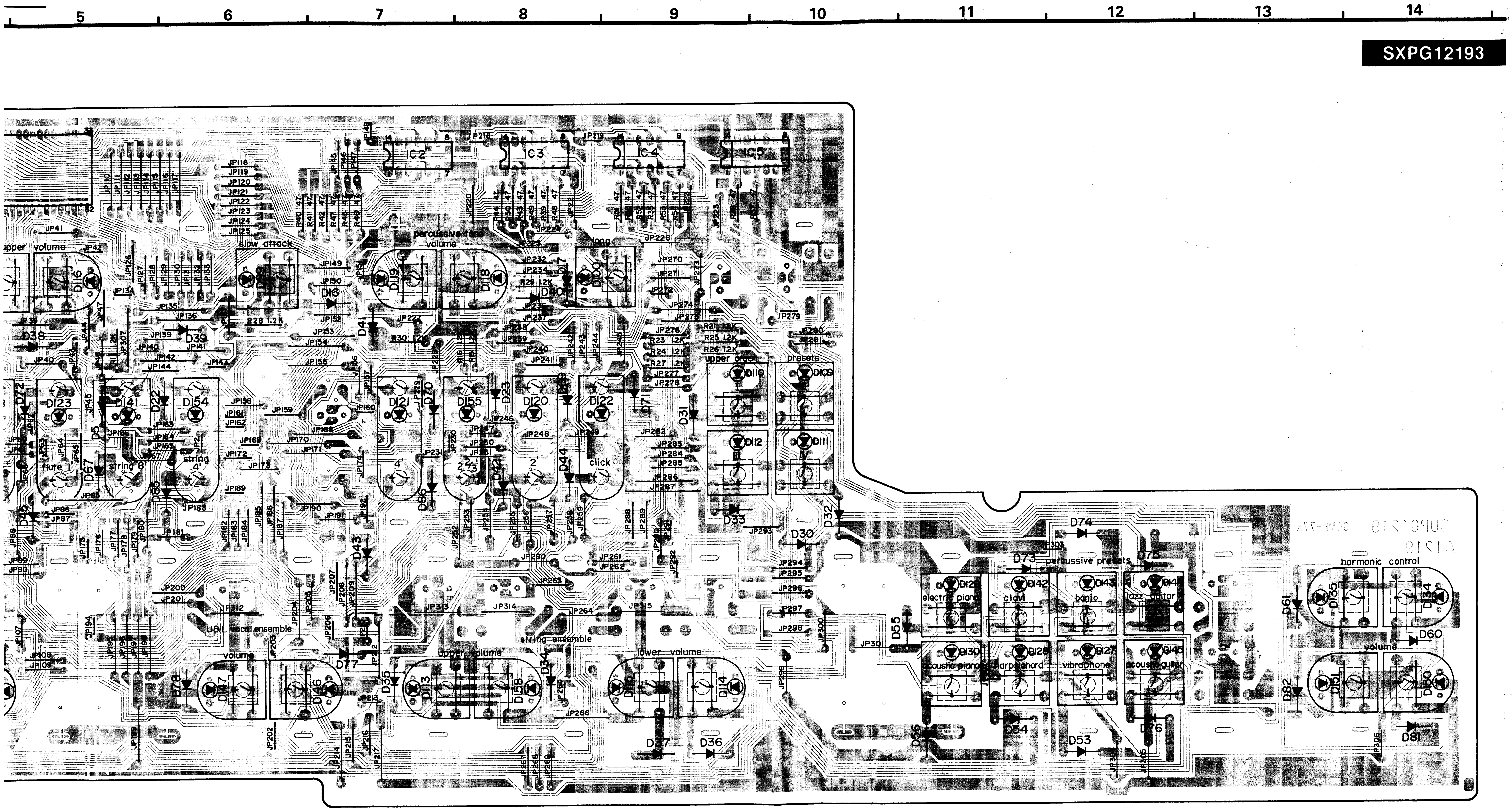
JP211
JP212
JP213
JP214
JP215
JP216
JP217
JP218
JP219
JP220
JP221
JP222
JP223
JP224
JP225
JP227
JP228
JP229
JP230
JP231
JP232
JP233
JP234
JP235
JP236
JP237
JP238
JP239
JP240
JP241
JP

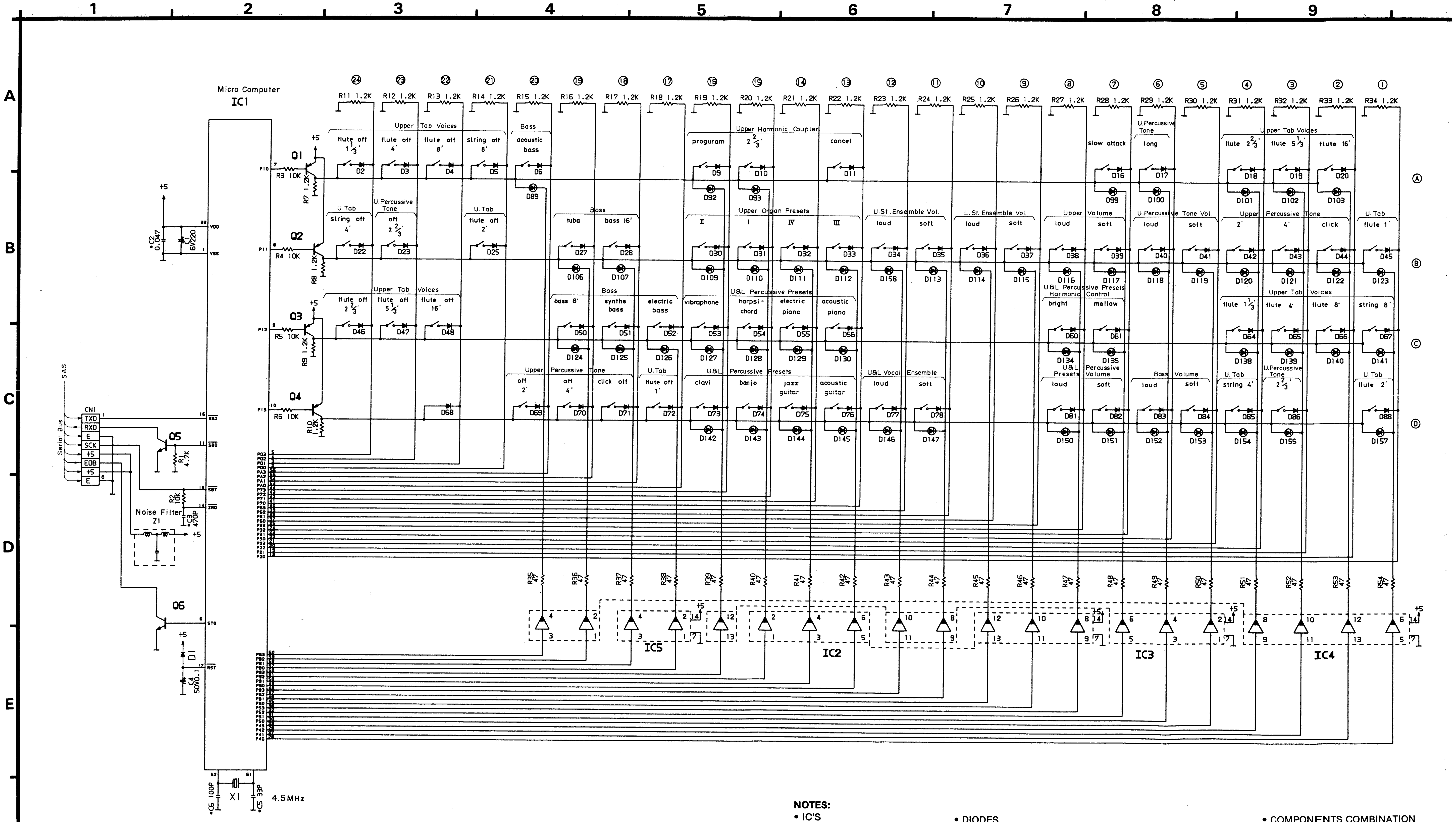
## U. CONTROL PANEL LEFT CIRCUIT BOARD (CPL)


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
CN1
E
+5
E0B
+5
SCK
E
RXD
TXD
Q1
Q2
Q3
Q4
Q5
Q6
IC1
IC2
IC3
IC4
IC5
X1
Z1
C1 6V220
C2 0.047
C3 470P
C4 50V0.1
C5 33P
C6 100P
R1 4.7K
R2 10K
cancel
2 2/3
program
upper
volume
slow attack
percussive tone
volume
long
flute 16'
flute 8'
flute 5 1/3'
flute 4'
flute 2 2/3'
flute 2'
flute 1 3/5'
flute 1'
string 8'
string 4'
4'
2 2/3'
2'
click
upper organ
presets
I
II
III
IV
bass
bass 8'
electric bass
tuba
bass 16'
acoustic bass
synthe bass
bass volume
U&L vocal ensemble
volume
upper volume
string ensemble
lower volume

**SXPG12193**


5
6
7
8
9
10
11
12
13
14
IC2
IC3
IC4
IC5
upper volume
slow attack
percussive tone volume
long
upper organ
presets
flute
string 8'
string 4'
click
percussive presets
electric piano
clavi
banjo
jazz guitar
acoustic piano
harpsichord
vibraphone
acoustic guitar
harmonic control
volume
U&L vocal ensemble
upper volume
string ensemble
lower volume
SUPG1219 GCMK-77X
A1219
D16
D38
D39
D4
D40
D72
D5
D22
D67
D65
D45
D70
D23
D42
D44
D71
D31
D33
D32
D30
D74
D73
D75
D55
D56
D54
D53
D76
D61
D60
D62
D81
D78
D77
D35
D34
D37
D36
D43
D66
R28 1.2K
R30 1.2K
R29 1.2K
R21 1.2K
R23 1.2K
R24 1.2K
R25 1.2K
R26 1.2K
R27 1.2K

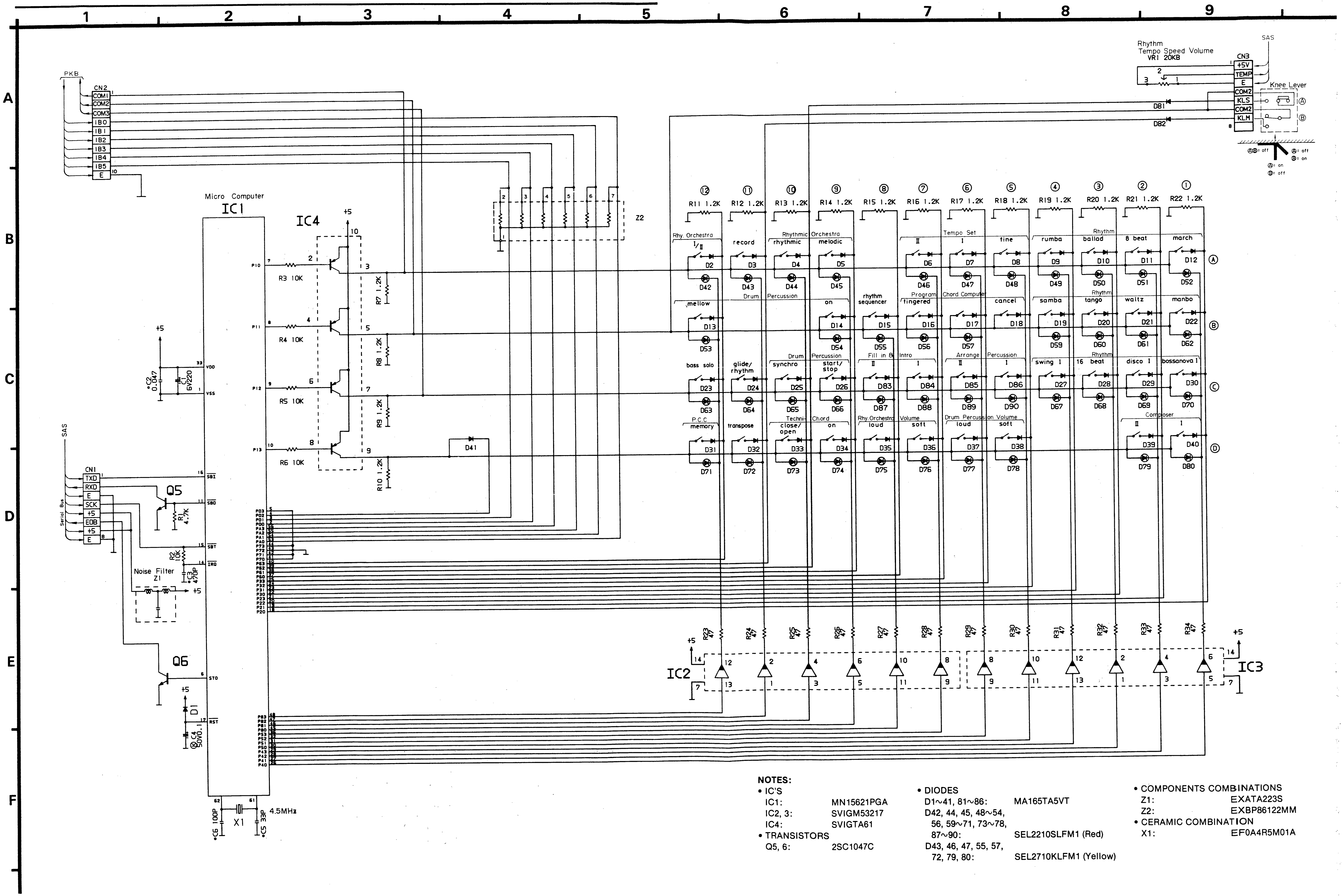
# U. CONTROL PANEL LEFT CIRCUIT DIAGRAM (CPL)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
Micro Computer
IC1
Q1
Q2
Q3
Q4
Q5
Q6
R3 10K
R4 10K
R5 10K
R6 10K
R7 1.2K
R8 1.2K
R9 1.2K
R10 1.2K
R11 1.2K
R12 1.2K
R13 1.2K
R14 1.2K
R15 1.2K
R16 1.2K
R17 1.2K
R18 1.2K
R19 1.2K
R20 1.2K
R21 1.2K
R22 1.2K
R23 1.2K
R24 1.2K
R25 1.2K
R26 1.2K
R27 1.2K
R28 1.2K
R29 1.2K
R30 1.2K
R31 1.2K
R32 1.2K
R33 1.2K
R34 1.2K
R1 4.7K
R2 10K
Upper Tab Voices
flute off 1 1/3'
flute off 4'
flute off 8'
string off 8'
Bass
acoustic bass
Upper Harmonic Coupler
proguram
2 2/3'
cancel
slow attack
U.Percussive Tone
long
Upper Tab Voices
flute 2 2/3'
flute 5 1/3'
flute 16'
U.Tab
string off 4'
U.Percussive Tone
off 2 2/3'
U.Tab
flute off 2'
Bass
tuba
bass 16'
Upper Organ Presets
II
I
IV
III
U.St.Ensemble Vol.
loud
soft
L.St.Ensemble Vol.
loud
soft
Upper Volume
loud
soft
U.Percussive Tone Vol.
loud
soft
Upper Percussive Tone
2'
4'
click
U.Tab
flute 1'
Upper Tab Voices
flute off 2 2/3'
flute off 5 1/3'
flute off 16'
Bass
bass 8'
synthe bass
electric bass
vibraphone
U&L Percussive Presets
harpsi-chord
electric piano
acoustic piano
U&L Percussive Presets Harmonic Control
bright
mellow
Upper Tab Voices
flute 1 1/3'
flute 4'
flute 8'
string 8'
Upper Percussive Tone
off 2'
off 4'
click off
U.Tab
flute off 1'
U&L Percussive Presets
clavi
banjo
jazz guitar
acoustic guitar
U&L Vocal Ensemble
loud
soft
U&L Presets Volume
loud
soft
Bass Volume
loud
soft
U.Tab
string 4'
U.Percussive Tone
2 2/3'
U.Tab
flute 2'
Serial Bus
SAS
CN1
TXD
RXD
E
SCK
+5
EOB
+5
E
Noise Filter
Z1
C2 0.047
C1 6V220
C3 470P
C4 50V0.1
D1
C6 100P
X1
C5 33P
4.5MHz
VDD
VSS
SBI
SBO
SBT
IRQ
STO
RST
IC2
IC3
IC4
IC5
R35 47 – R54 47
Ⓐ
Ⓑ
Ⓒ
Ⓓ

**NOTES:**

- IC'S
  IC1: MN15621PGA
  IC2~5: SVIGM53217
- TRANSISTORS
  Q1~4: 2SA830B
  Q5, 6: 2SC1047C
- DIODES
  D1~6, 9~11, 16~20, 22, 23, 25, 27, 28, 30~48, 50~56, 60, 61, 64~78, 81~86, 88: MA150IR
  D89, 93, 99, 100~103, 106, 107, 113~130, 134, 135, 138~147, 150~155, 157, 158,: SEL2210SLFM1 (Red)
  D92, 109~112: SEL2710KLFM1 (Yellow)
- COMPONENTS COMBINATION
  Z1: EXATA223S
- CERAMIC OSCILLATOR
  X1: EF0A4R5M01A

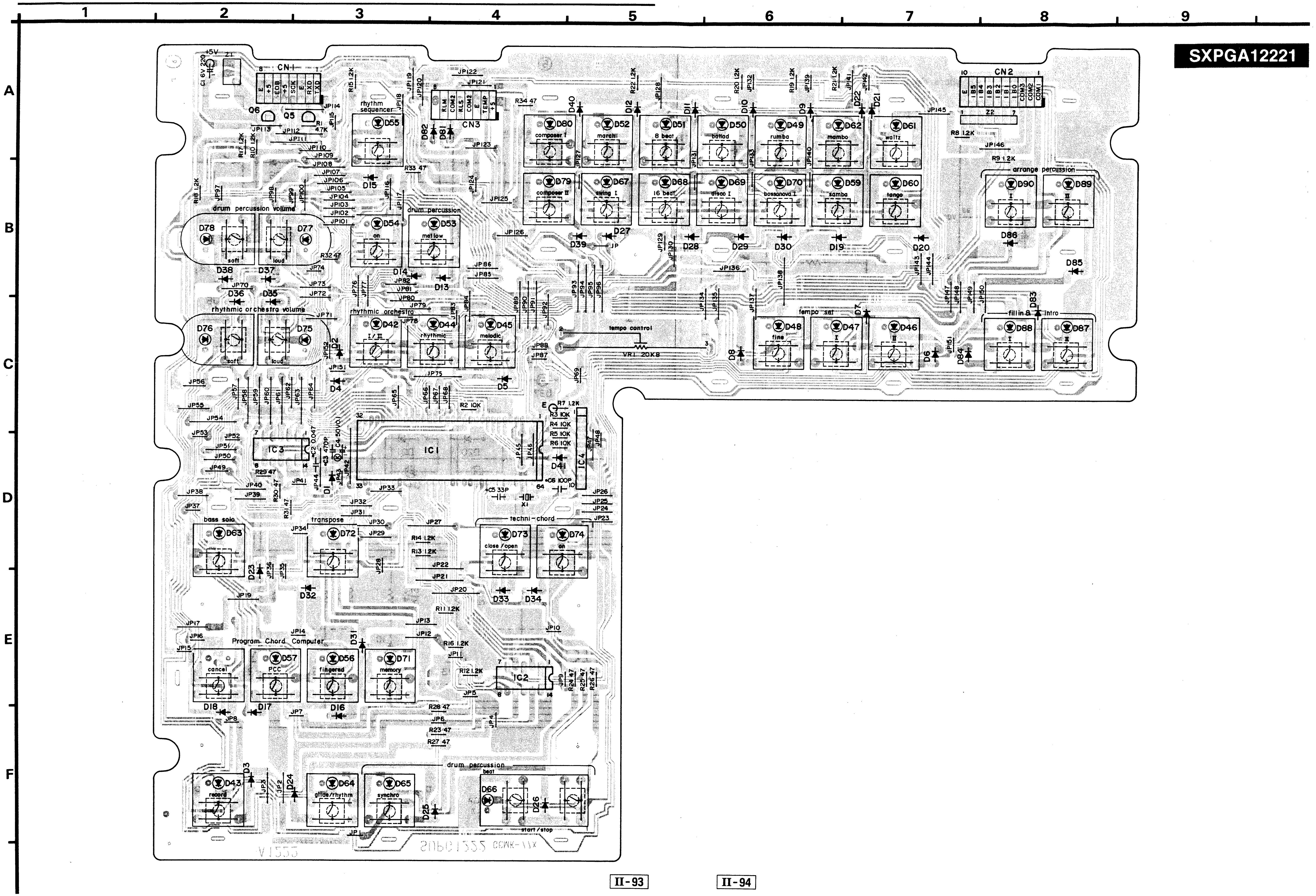
# CONTROL PANEL SW. LEFT CIRCUIT DIAGRAM (CPSL)


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
PKB
CN2
COM1
COM2
COM3
IB0
IB1
IB2
IB3
IB4
IB5
E
Micro Computer
IC1
IC4
+5
R3 10K
R4 10K
R5 10K
R6 10K
R7 1.2K
R8 1.2K
R9 1.2K
R10 1.2K
D41
Z2
P10
P11
P12
P13
VDD
VSS
C2 0.047
C1 6V220
SAS
CN1
TXD
RXD
SCK
EOB
Serial Bus
Q5
R1 4.7K
R2 10K
C3 470P
Noise Filter
Z1
Q6
D1
C4 50V0.1
SBI
SBO
SBT
IRQ
STO
RST
C5 100P
X1
C3 33P
4.5MHz
Rhythm
Tempo Speed Volume
VR1 20KB
CN3
+5V
TEMP
COM2
KLS
KLM
Knee Lever
D81
D82
Ⓐ off
Ⓐ on
Ⓑ on
Ⓑ off
R11 1.2K
R12 1.2K
R13 1.2K
R14 1.2K
R15 1.2K
R16 1.2K
R17 1.2K
R18 1.2K
R19 1.2K
R20 1.2K
R21 1.2K
R22 1.2K
Rhy. Orchestra
1/II
record
Rhythmic Orchestra
rhythmic
melodic
Tempo Set
II
I
fine
rumba
Rhythm
ballad
8 beat
march
mellow
Drum Percussion
on
rhythm sequencer
Program
fingered
Chord Computer
cancel
samba
tango
waltz
manbo
bass solo
glide/rhythm
Drum Percussion
synchro
start/stop
Fill in 8
Intro
Arrange
Percussion
swing I
16 beat
disco I
bossanova I
P.C.C.
memory
transpose
Techni-Chord
close/open
on
Rhy.Orchestra Volume
loud
soft
Drum Percussion Volume
loud
soft
Composer
II
I
R23 47 – R34 47
IC2
IC3

**NOTES:**

- IC'S
  - IC1: MN15621PGA
  - IC2, 3: SVIGM53217
  - IC4: SVIGTA61
- TRANSISTORS
  - Q5, 6: 2SC1047C
- DIODES
  - D1~41, 81~86: MA165TA5VT
  - D42, 44, 45, 48~54, 56, 59~71, 73~78, 87~90: SEL2210SLFM1 (Red)
  - D43, 46, 47, 55, 57, 72, 79, 80: SEL2710KLFM1 (Yellow)
- COMPONENTS COMBINATIONS
  - Z1: EXATA223S
  - Z2: EXBP86122MM
- CERAMIC COMBINATION
  - X1: EF0A4R5M01A

# CONTROL PANEL SW. LEFT CIRCUIT BOARD (CPSL)



SXPGA12221
1
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7
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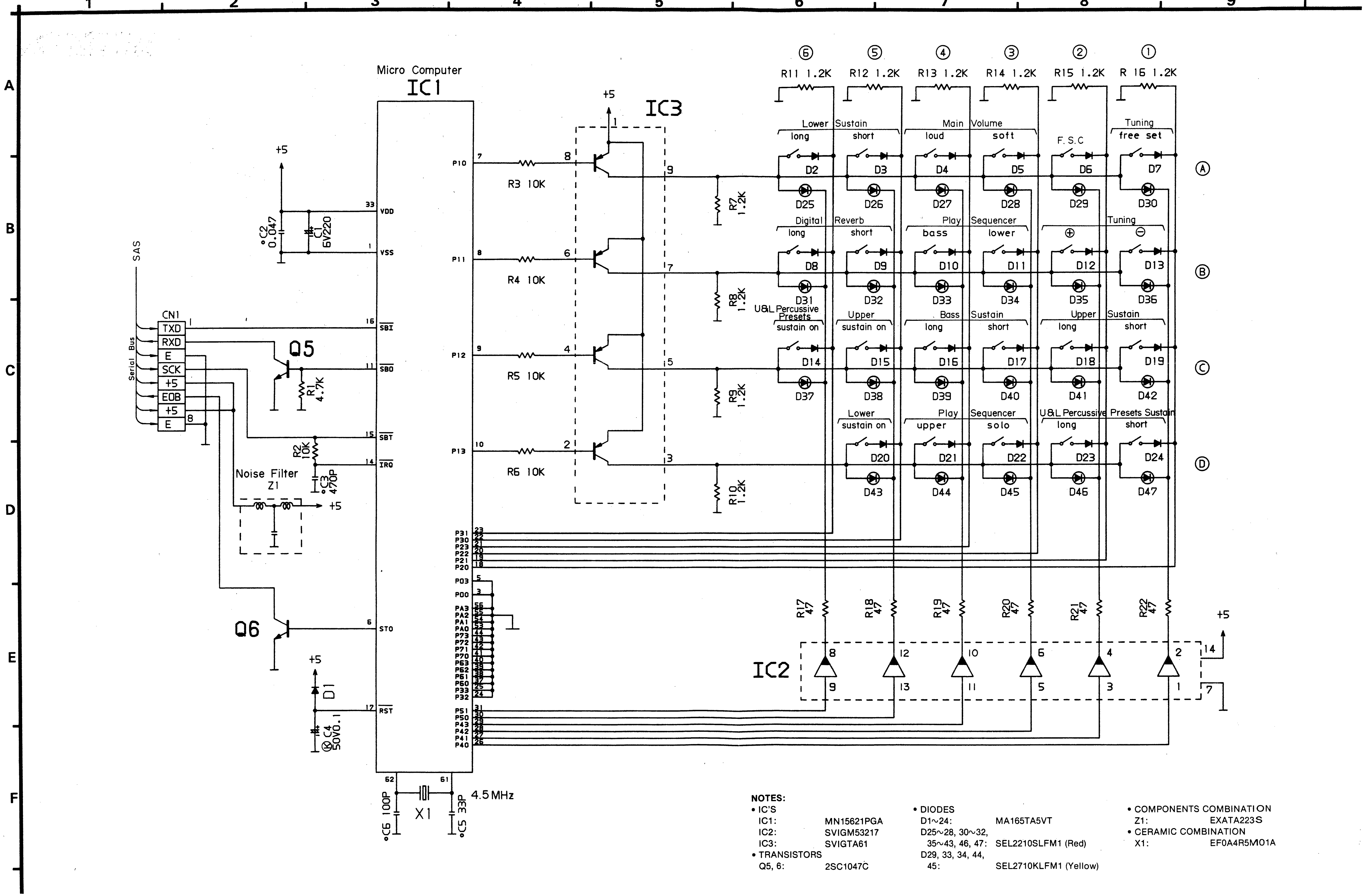
9
A
B
C
D
E
F
CN1
CN2
CN3
IC1
IC2
IC3
IC4
Q5
Q6
VR1 20KB
tempo control
rhythm sequencer
composer I
march
8 beat
ballad
rumba
mambo
waltz
composer II
swing I
16 beat
disco I
bossanova I
samba
tango
arrange percussion
drum percussion volume
soft
loud
drum percussion
on
mellow
rhythmic orchestra volume
rhythmic orchestra
I / II
rhythmic
melodic
tempo set
fine
fill in & intro
bass solo
transpose
techni-chord
close / open
Program Chord Computer
cancel
PCC
fingered
memory
record
glide/rhythm
synchro
beat
start / stop

# CONTROL PANEL SW. RIGHT CIRCUIT DIAGRAM (CPSR)


1
2
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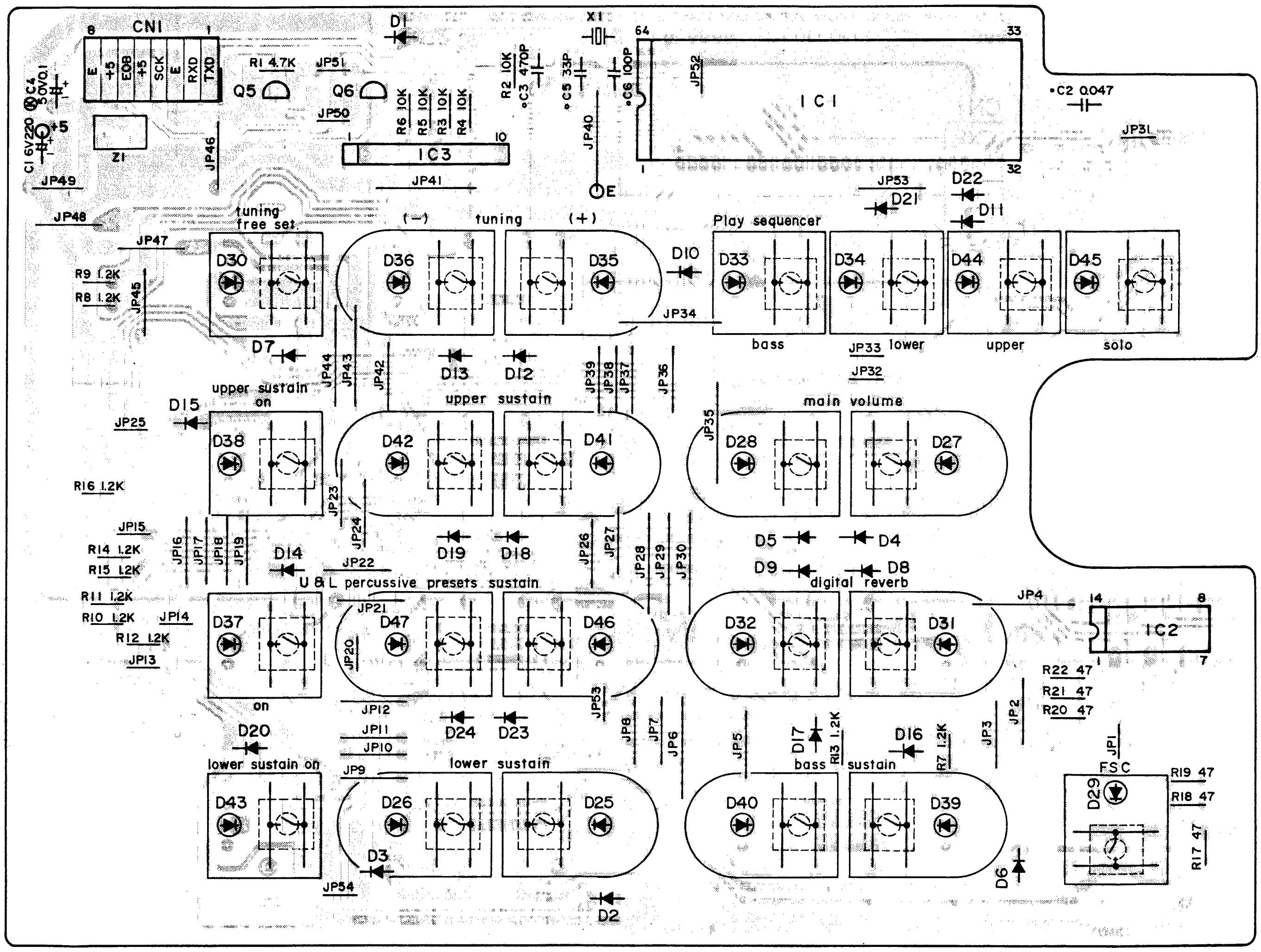
5
6
7
8
9
A
B
C
D
E
F
Micro Computer
IC1
IC2
IC3
+5
VDD
VSS
SBI
SBO
SBT
IRQ
STO
RST
P10
P11
P12
P13
P31
P30
P23
P22
P21
P20
P03
P00
PA3
PA2
PA1
PA0
P73
P72
P71
P70
P63
P62
P61
P60
P33
P32
P51
P50
P43
P42
P41
P40
R3 10K
R4 10K
R5 10K
R6 10K
R7 1.2K
R8 1.2K
R9 1.2K
R10 1.2K
R11 1.2K
R12 1.2K
R13 1.2K
R14 1.2K
R15 1.2K
R 16 1.2K
R17 47
R18 47
R19 47
R20 47
R21 47
R22 47
C2 0.047
C1 6V220
R1 4.7K
R2 10K
C3 470P
C4 50V0.1
D1
C6 100P
C5 33P
X1
4.5 MHz
SAS
Serial Bus
CN1
TXD
RXD
E
SCK
+5
EOB
+5
E
Q5
Q6
Noise Filter
Z1
⑥
⑤
④
③
②
①
Ⓐ
Ⓑ
Ⓒ
Ⓓ
Lower Sustain
long
short
Main Volume
loud
soft
F. S. C
Tuning
free set
Digital
long
Reverb
short
Play
bass
Sequencer
lower
Tuning
⊕
⊖
U&L Percussive Presets
sustain on
Upper
sustain on
Bass
long
Sustain
short
Upper
long
Sustain
short
Lower
sustain on
Play
upper
Sequencer
solo
U&L Percussive Presets Sustain
long
short
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
D17
D18
D19
D20
D21
D22
D23
D24
D25
D26
D27
D28
D29
D30
D31
D32
D33
D34
D35
D36
D37
D38
D39
D40
D41
D42
D43
D44
D45
D46
D47

NOTES:

- IC'S
  - IC1: MN15621PGA
  - IC2: SVIGM53217
  - IC3: SVIGTA61
- TRANSISTORS
  - Q5, 6: 2SC1047C
- DIODES
  - D1~24: MA165TA5VT
  - D25~28, 30~32, 35~43, 46, 47: SEL2210SLFM1 (Red)
  - D29, 33, 34, 44, 45: SEL2710KLFM1 (Yellow)
- COMPONENTS COMBINATION
  - Z1: EXATA223S
- CERAMIC COMBINATION
  - X1: EF0A4R5M01A

# CONTROL PANEL SW. RIGHT CIRCUIT BOARD (CPSR)

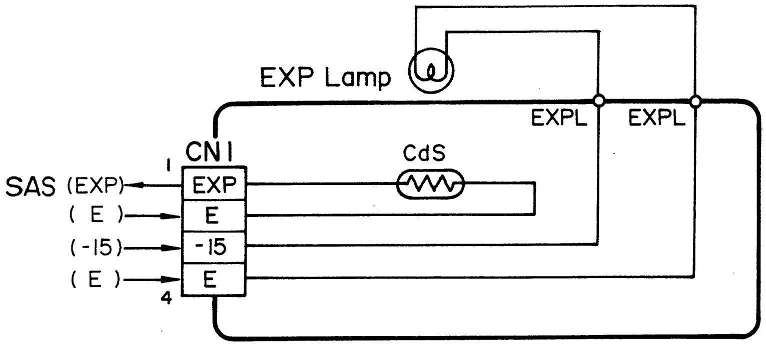
**SXPGB12221**

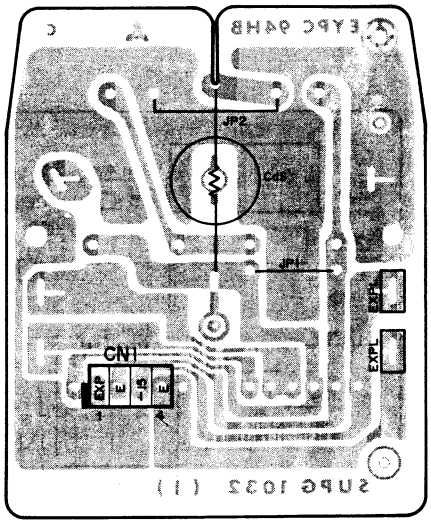


CN1
8
1
E
+5
EOB
+5
SCK
E
RXD
TXD
C4 50V0.1
C1 6V220
+5
Z1
JP49
JP48
JP47
JP46
JP45
R1 4.7K
JP51
Q5
Q6
JP50
D1
R2 10K
C3 470P
C5 33P
C6 100P
R6 10K
R5 10K
R3 10K
R4 10K
IC3
1
10
JP41
X1
JP40
E
64
33
1
32
IC1
JP52
C2 0.047
JP31
JP53
D22
D21
D11
tuning free set
(−)
tuning
(+)
Play sequencer
D30
D36
D35
D10
D33
D34
D44
D45
R9 1.2K
R8 1.2K
JP34
bass
JP33
lower
upper
solo
D7
D13
D12
JP44
JP43
JP42
JP39
JP38
JP37
JP36
JP32
upper sustain on
upper sustain
main volume
D15
JP25
JP35
D38
D42
D41
D28
D27
R16 1.2K
JP23
JP24
JP15
D19
D18
D5
D4
R14 1.2K
R15 1.2K
JP16
JP17
JP18
JP19
D14
JP22
JP26
JP27
JP28
JP29
JP30
D9
D8
U & L percussive presets sustain
digital reverb
JP4
R11 1.2K
R10 1.2K
JP14
R12 1.2K
JP13
JP21
D37
D47
D46
D32
D31
14
8
IC2
1
7
JP20
on
JP12
JP53
R22 47
R21 47
R20 47
D20
JP11
JP10
D24
D23
JP8
JP7
JP6
JP5
D17
R13 1.2K
D16
R7 1.2K
JP3
JP2
JP1
lower sustain on
JP9
lower sustain
bass
sustain
FSC
R19 47
R18 47
D43
D26
D25
D40
D39
D29
D3
D6
R17 47
JP54
D2

# EXPRESSION CIRCUIT (EXP)

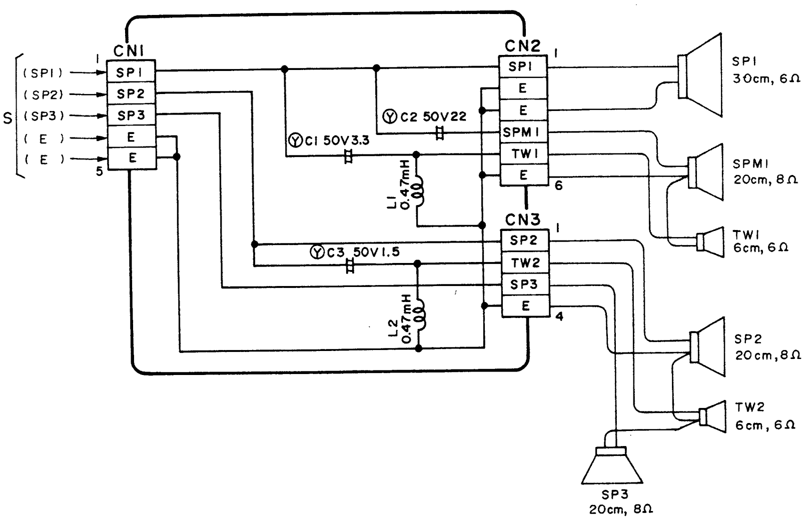
**SXPG103211**

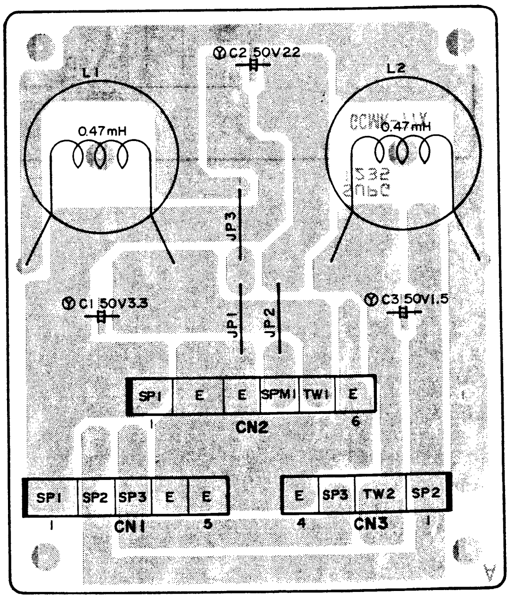

EXP Lamp
EXPL
EXPL
CN1
CdS
1
SAS (EXP)
EXP
( E )
E
( -15 )
-15
( E )
E
4


JP2
CdS
JP1
EXPL
EXPL
CN1
EXP
E
-15
E
1
4

# NETWORK CIRCUIT (NW)

**SXPG123521**

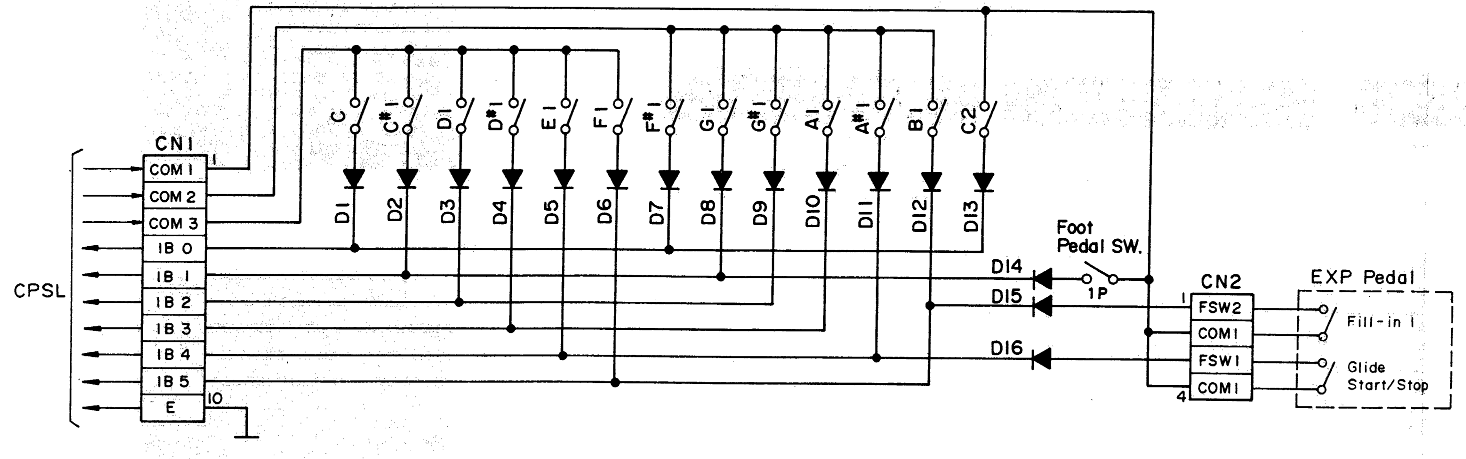

CN1
1
(SP1)
(SP2)
(SP3)
( E )
( E )
S
SP1
SP2
SP3
E
E
5
C1 50V3.3
C2 50V22
C3 50V1.5
L1 0.47mH
L2 0.47mH
CN2
1
SP1
E
E
SPM1
TW1
E
6
CN3
1
SP2
TW2
SP3
E
4
SP1 30cm, 6Ω
SPM1 20cm, 8Ω
TW1 6cm, 6Ω
SP2 20cm, 8Ω
TW2 6cm, 6Ω
SP3 20cm, 8Ω


L1
L2
0.47mH
0.47mH
C2 50V22
JP3
C1 50V3.3
JP1
JP2
C3 50V1.5
SP1
E
E
SPM1
TW1
E
1
CN2
6
SP1
SP2
SP3
E
E
1
CN1
5
E
SP3
TW2
SP2
4
CN3
1

**NOTE:**

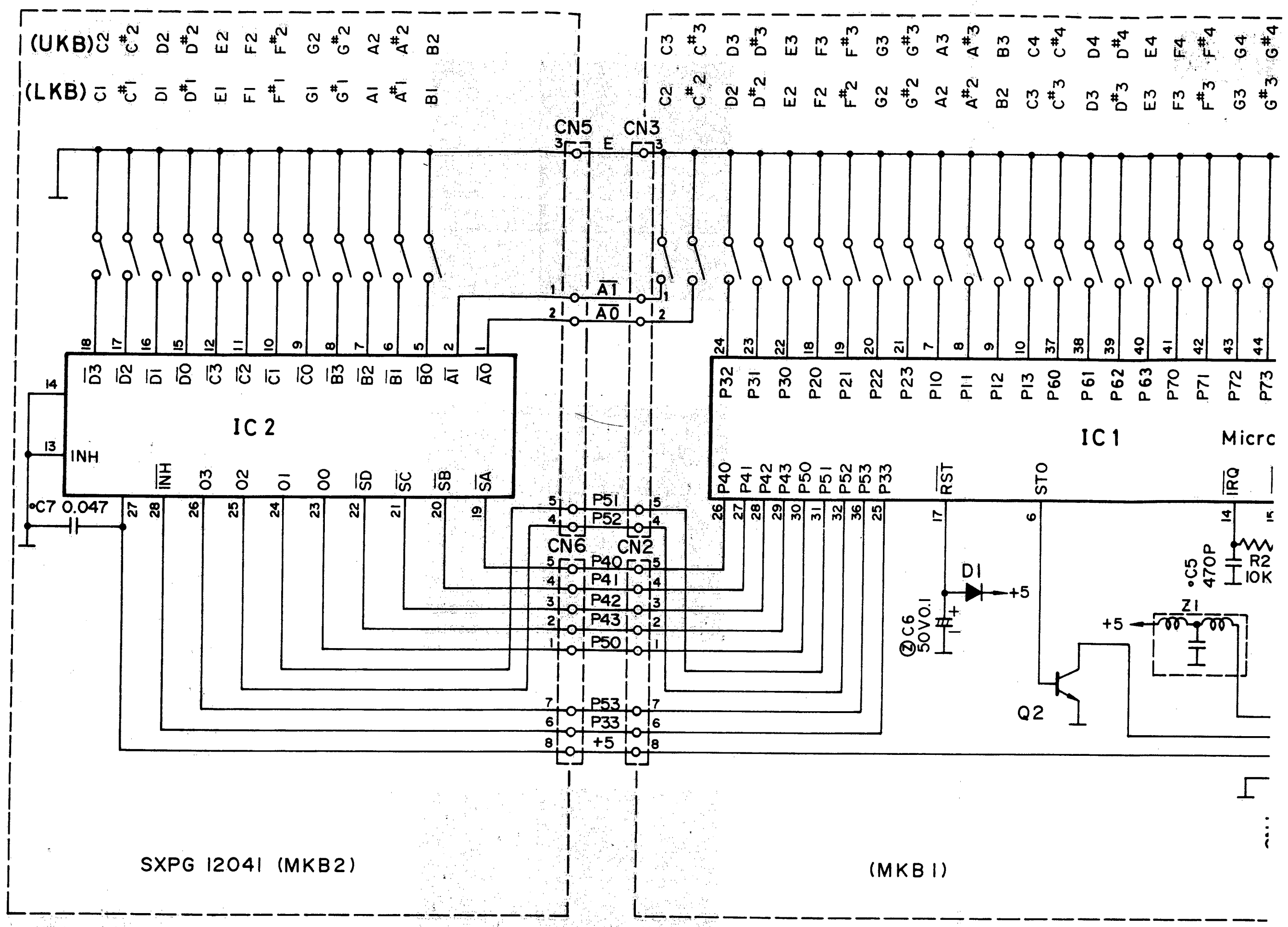
- COILS
  L1, 2: SLCSC471KU

# PEDAL KEYBOARD CIRCUIT DIAGRAM (PKB)


CPSL
CN1
COM 1
COM 2
COM 3
IB 0
IB 1
IB 2
IB 3
IB 4
IB 5
E
10
C
C#1
D1
D#1
E1
F1
F#1
G1
G#1
A1
A#1
B1
C2
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
Foot Pedal SW.
1P
CN2
FSW2
COM1
FSW1
COM1
1
4
EXP Pedal
Fill-in I
Glide Start/Stop

NOTE:
- DIODES
  D1~16: MA150IR

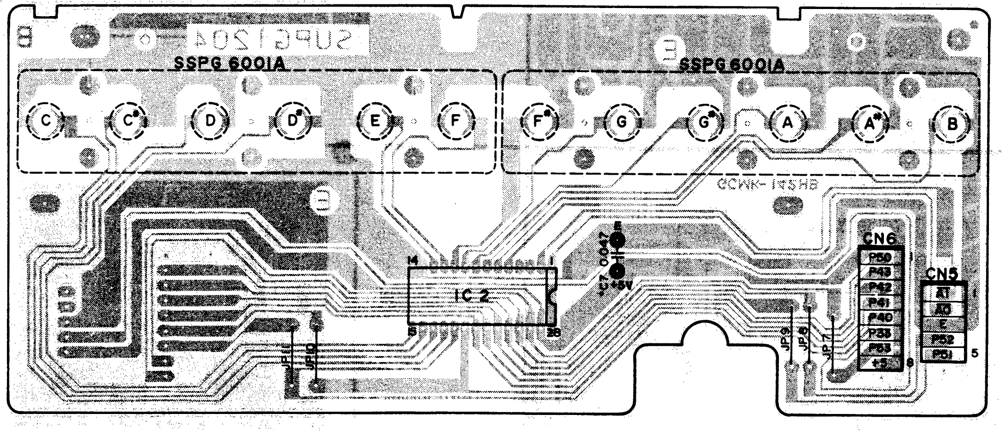
# MANUAL KEYBOARD CIRCUIT DIAGRAM (MKB1) (MKB2)


(UKB)
(LKB)
CN5
CN3
E
IC 2
IC 1
Micro
INH
A1
A0
P51
P52
CN6
CN2
P40
P41
P42
P43
P50
P53
P33
+5
C7 0.047
RST
STO
IRQ
D1
+5
C6 50V0.1
C5 470P
R2 10K
Z1
+5
Q2
SXPG 12041 (MKB2)
(MKB1)

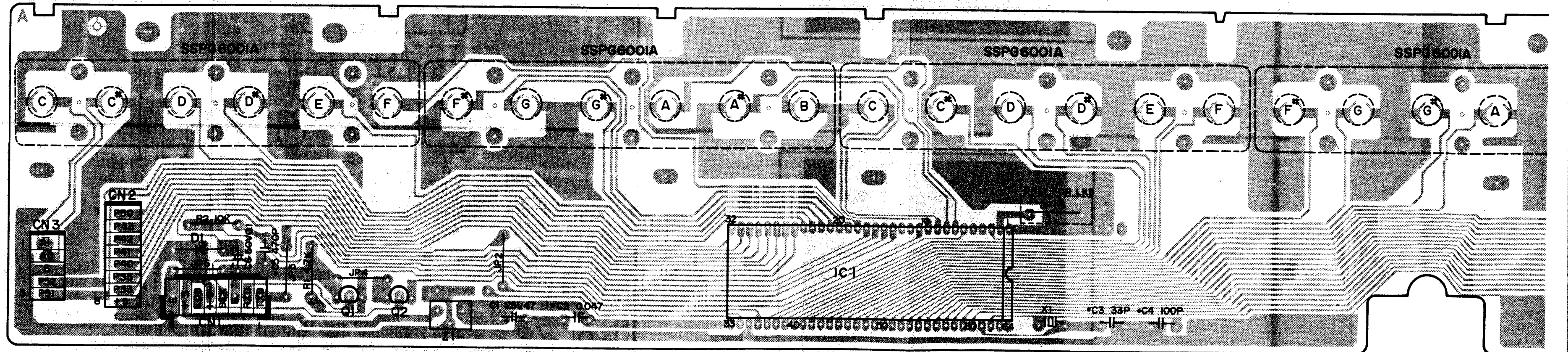
# MANUAL KEYBOARD CIRCUIT BOARD (MKB1) (MKB2)

**MKB2**

**SXPG12041**

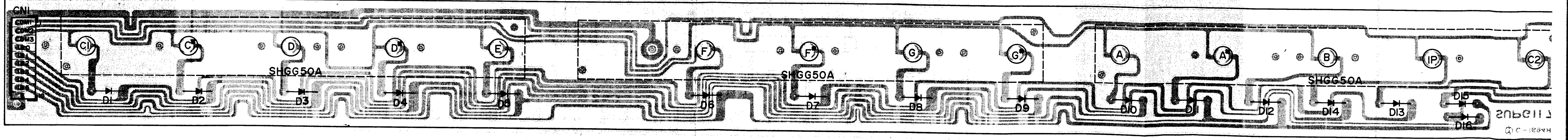

SSPG6001A
SSPG6001A
C
C#
D
D#
E
F
F#
G
G#
A
A#
B
IC 2
CN6
CN5

**MKB1**

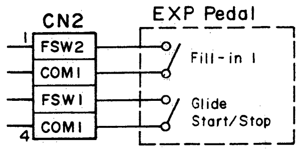

A
SSPG6001A
SSPG6001A
SSPG6001A
SSPG6001A
C
C#
D
D#
E
F
F#
G
G#
A
A#
B
CN3
CN2
IC1
X1
C3 33P
C4 100P

# PEDAL KEYBOARD CIRCUIT BOARD (PKB)

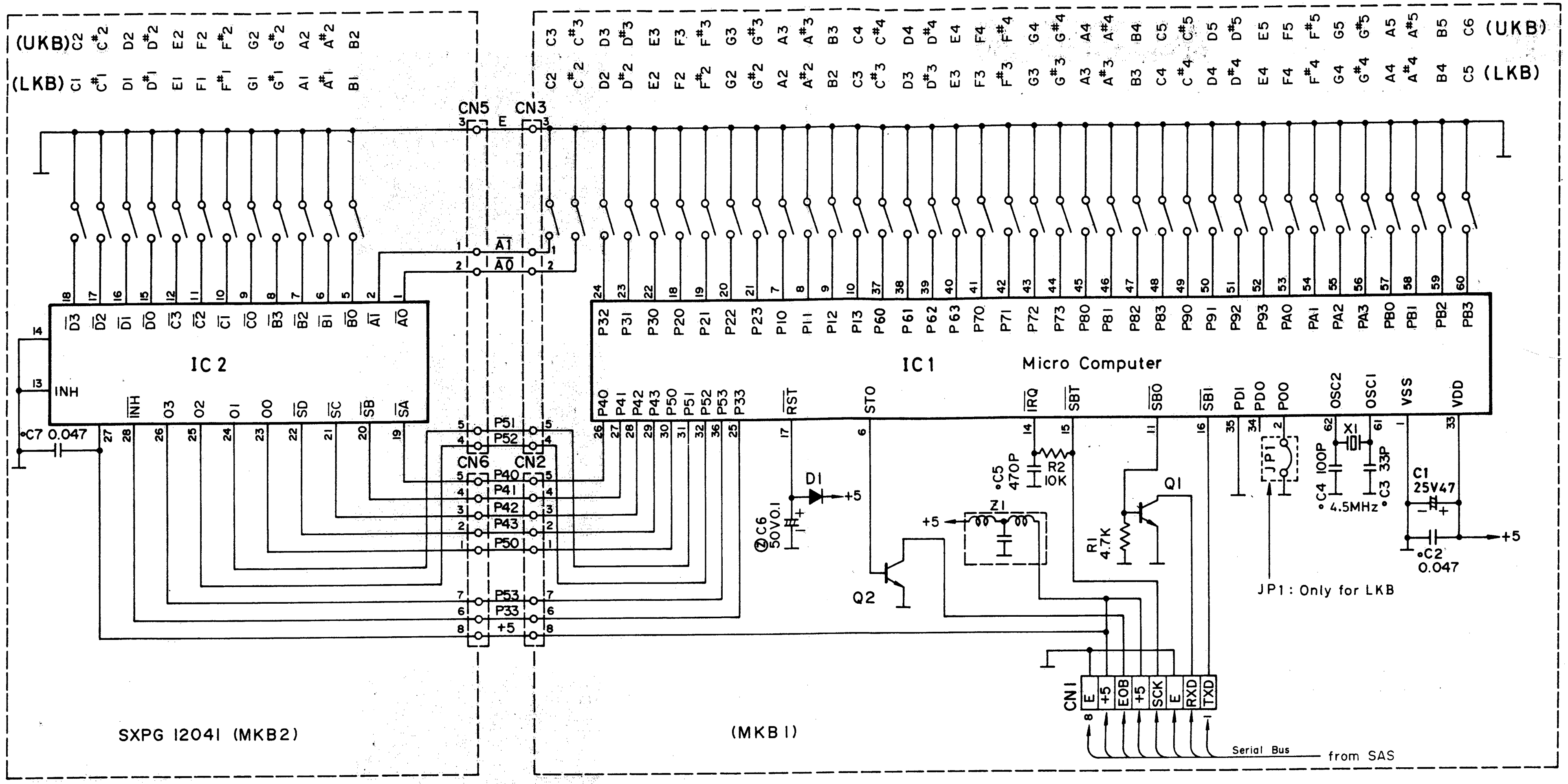
**SXPG1**


CN1
C1
C#
D
D#
E
F
F#
G
G#
A
A#
B
1P
C2
SHGG50A
SHGG50A
SHGG50A
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D14
D13
D15
D16

# MANUAL KEYBOARD CIRCUIT DIAGRAM (MKB1) (MKB2)


CN2
EXP Pedal
FSW2
COM1
FSW1
COM1
Fill-in 1
Glide Start/Stop

NOTE:
- DIODES
  D1~16: MA150IR


(UKB)
(LKB)
CN5
CN3
CN6
CN2
IC 2
IC 1 Micro Computer
INH
C7 0.047
D1 +5
C6 50V0.1
C5 470P
R2 10K
Z1
R1 4.7K
Q1
Q2
JP1
C4 100P
X1
C3 33P
4.5MHz
C1 25V47
C2 0.047
+5
JP1: Only for LKB
CN1
E
+5
EOB
+5
SCK
E
RXD
TXD
Serial Bus
from SAS
SXPG 12041 (MKB2)
(MKB1)

**MKB1**

NOTES:
- IC
  IC1: MN15621PGA
- TRANSISTORS
  Q1, 2: 2SC1047C
- DIODE
  D1: MA150IR
- COMPONENTS COMBINATION
  Z1: EXATA223S
- CERAMIC OSCILLATOR
  X1: EF0A4R5M01A

**MKB2**

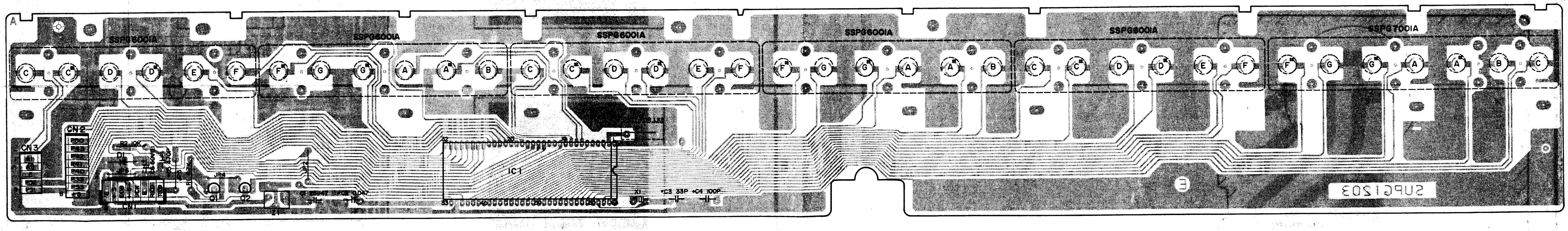
NOTE:
- IC
  IC1: SVIGLC7800

## MKB2)

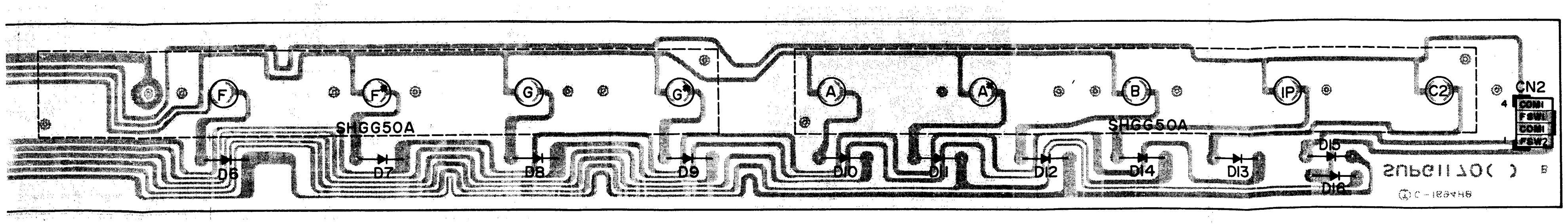
## MKB1

∗ Upper Keyboard
**SXPG12032**

∗ Lower Keyboard
**SXPG12031**


A
SSPG6001A
SSPG6001A
SSPG6001A
SSPG6001A
SSPG6001A
SSPG7001A
CN3
CN2
IC1
Q1
Q2
Z1
X1
C3 33P
C4 100P
SUPG1203

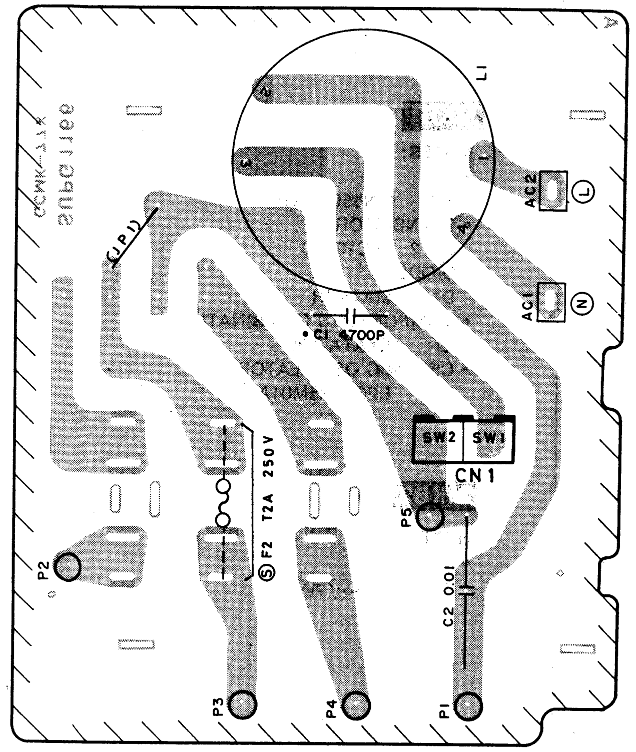
## SXPG11702


F
F#
G
G#
A
A#
B
IP
C2
CN2
COM1
FSW1
COM1
FSW2
SHGG50A
SHGG50A
D6
D7
D8
D9
D10
D11
D12
D14
D13
D15
D16
SUPG1170( )
B

# AC POWER SUPPLY CIRCUIT BOARD (ACP)

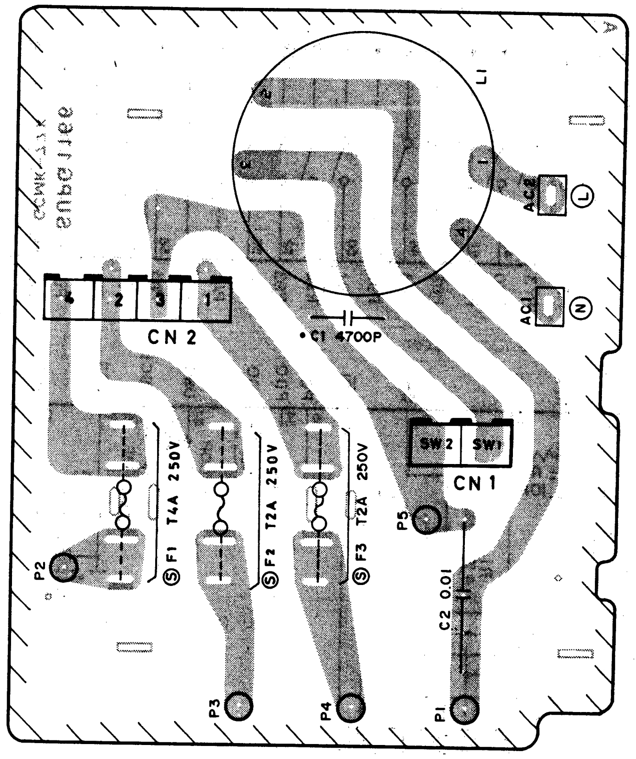
1 2 3 4

* Products for Europe only. **SXPG11661**



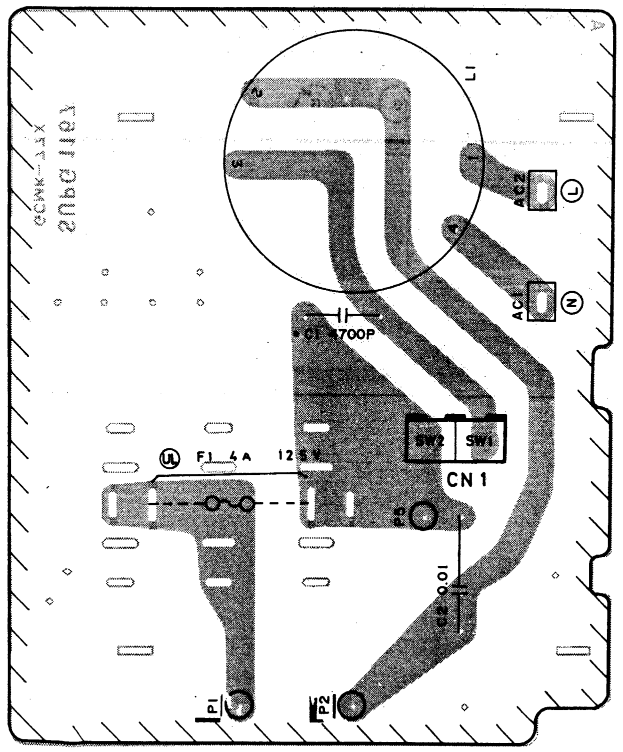
L1
CN 1
SW2
SW1
AC1
AC2
• C1 4700P
C2 0.01
F2 T2A 250V
JP1
P1
P2
P3
P4
P5

* Products for [EK], [XL], [XR], [XS], [X], [XX] and [XV] only. **SXPG11663**



L1
CN 2
CN 1
SW2
SW1
AC1
AC2
• C1 4700P
C2 0.01
F1 T4A 250V
F2 T2A 250V
F3 T2A 250V
P1
P2
P3
P4
P5

* Products for [XT] only. **SXPG11672**

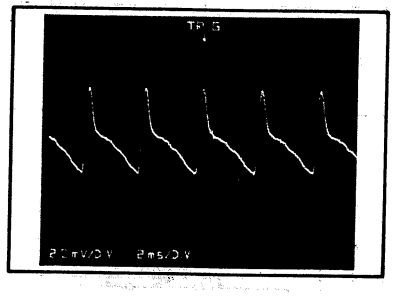


L1
CN 1
SW2
SW1
AC1
AC2
• C1 4700P
F1 4A 125V
C2 0.01
P1
P2

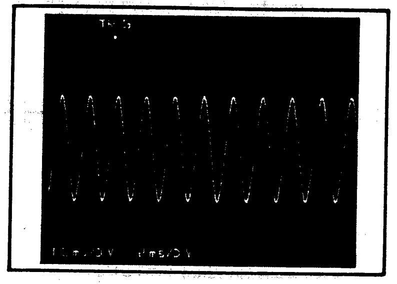
# AMP & POWER SUPPLY CIRCUIT BOARD (AS)

1 2 3 4 5

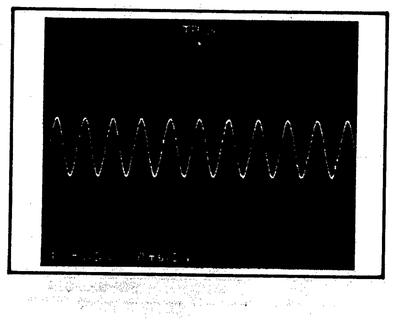
❶



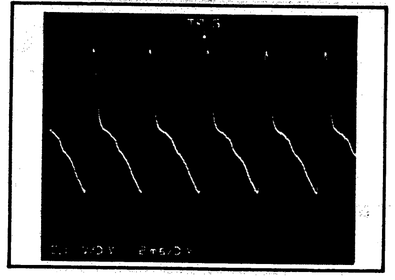
❷



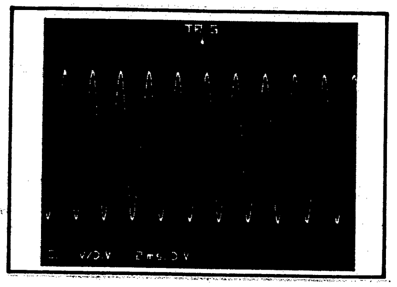
❸



❹



❺



**■ Measuring Condition**

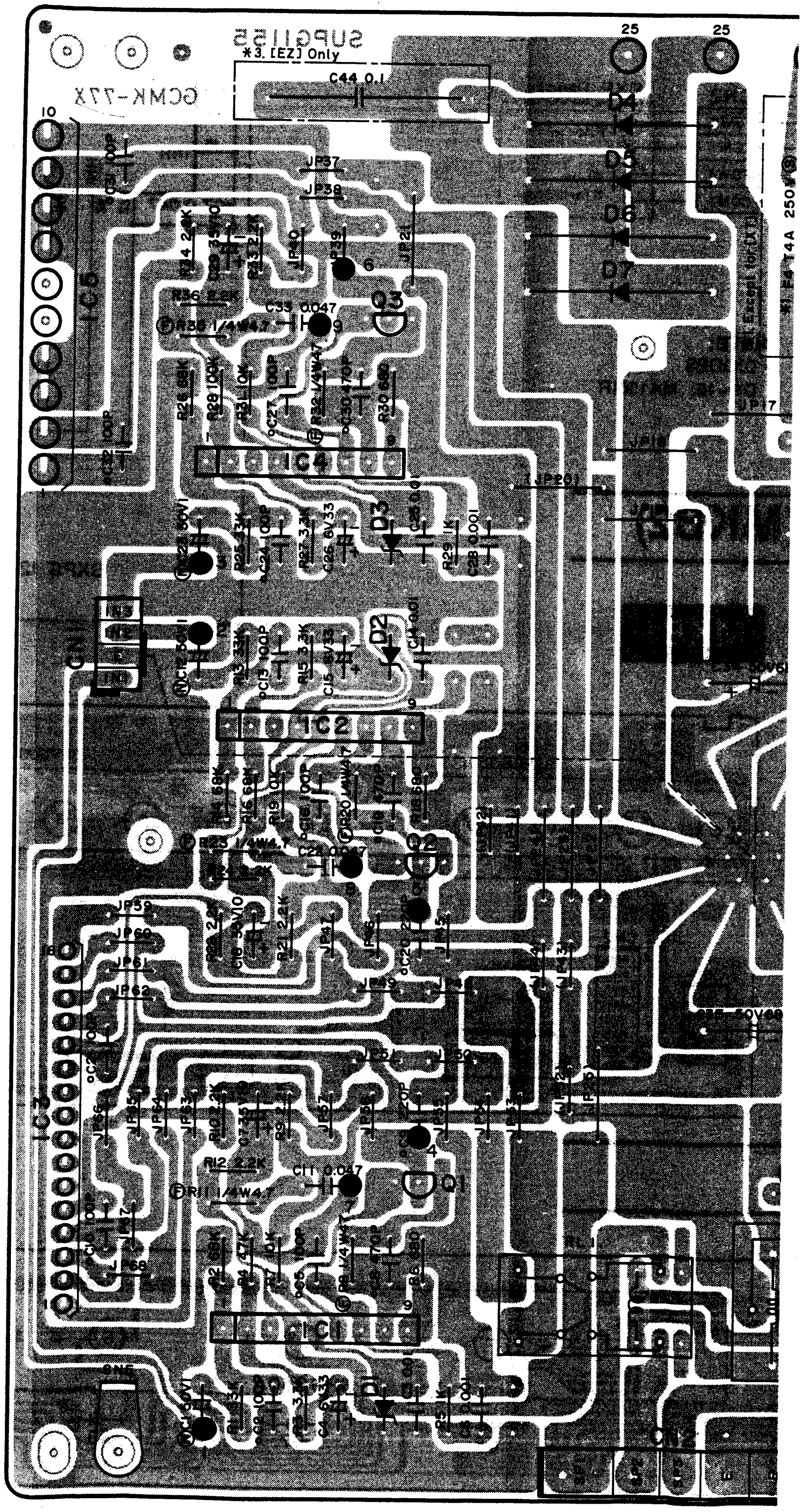
1. Check Point ❶, ❹, ❼
   - U. Orchestral Presets ...Trombone
   - Harmonic Control .........Center
   - Upper Key ......................C4
   - OPS Vol, Main Vol, Exp.....max
2. Check Point ❷, ❺, ❽
   - Upper Tab .....................Flute 8′
   - Upper Key .....................C4
   - Upper Tab Vol, Main Vol, Exp.....m

**SXPG11556**

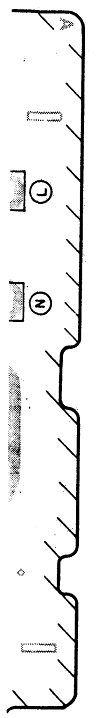
* 3...C44: Products for [EZ] only.

**SXPG**

* 1...F4: T4A 25

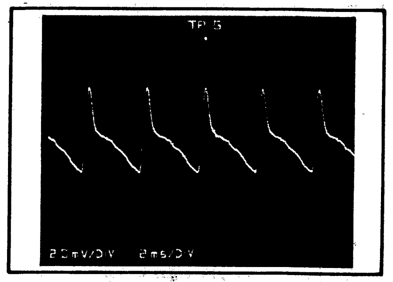


SUPG1155
*3. [EZ] Only
C44 0.1
GCMK-77X
25
25
D4
D5
D6
D7
IC5
IC4
IC2
IC1
IC3
Q3
Q1
D2
D3
CN11
JP37
JP38

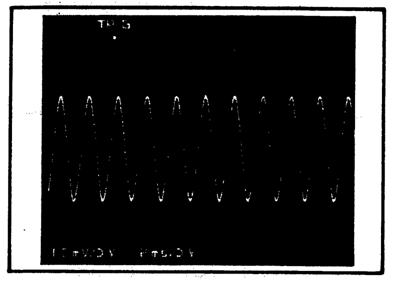


## AMP & POWER SUPPLY CIRCUIT BOARD (AS)

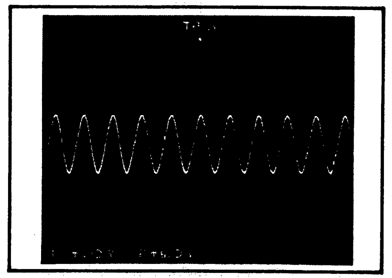
❶



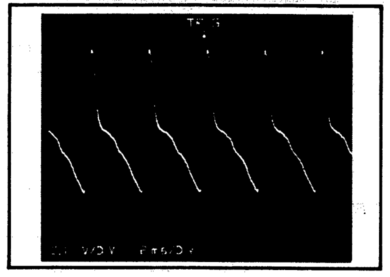
❷



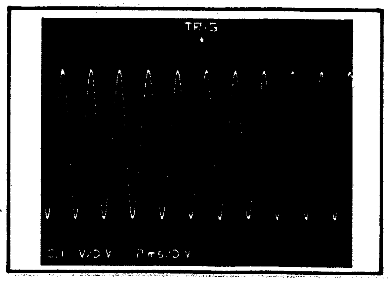
❸



❹



❺



**■ Measuring Condition**

1. Check Point ❶, ❹, ❼
   - U. Orchestral Presets ...Trombone
   - Harmonic Control .........Center
   - Upper Key ......................C4
   - OPS Vol, Main Vol, Exp.....max
2. Check Point ❷, ❺, ❽
   - Upper Tab ......................Flute 8′
   - Upper Key ......................C4
   - Upper Tab Vol, Main Vol, Exp.....max
3. Check Point ❸, ❻, ❾
   - Upper Tab ......................Flute 8′
   - Celeste..........................Upper Tab ON
   - Upper Key ......................C4
   - Upper Tab Vol, Main Vol, EXP...max

**SXPG11556**

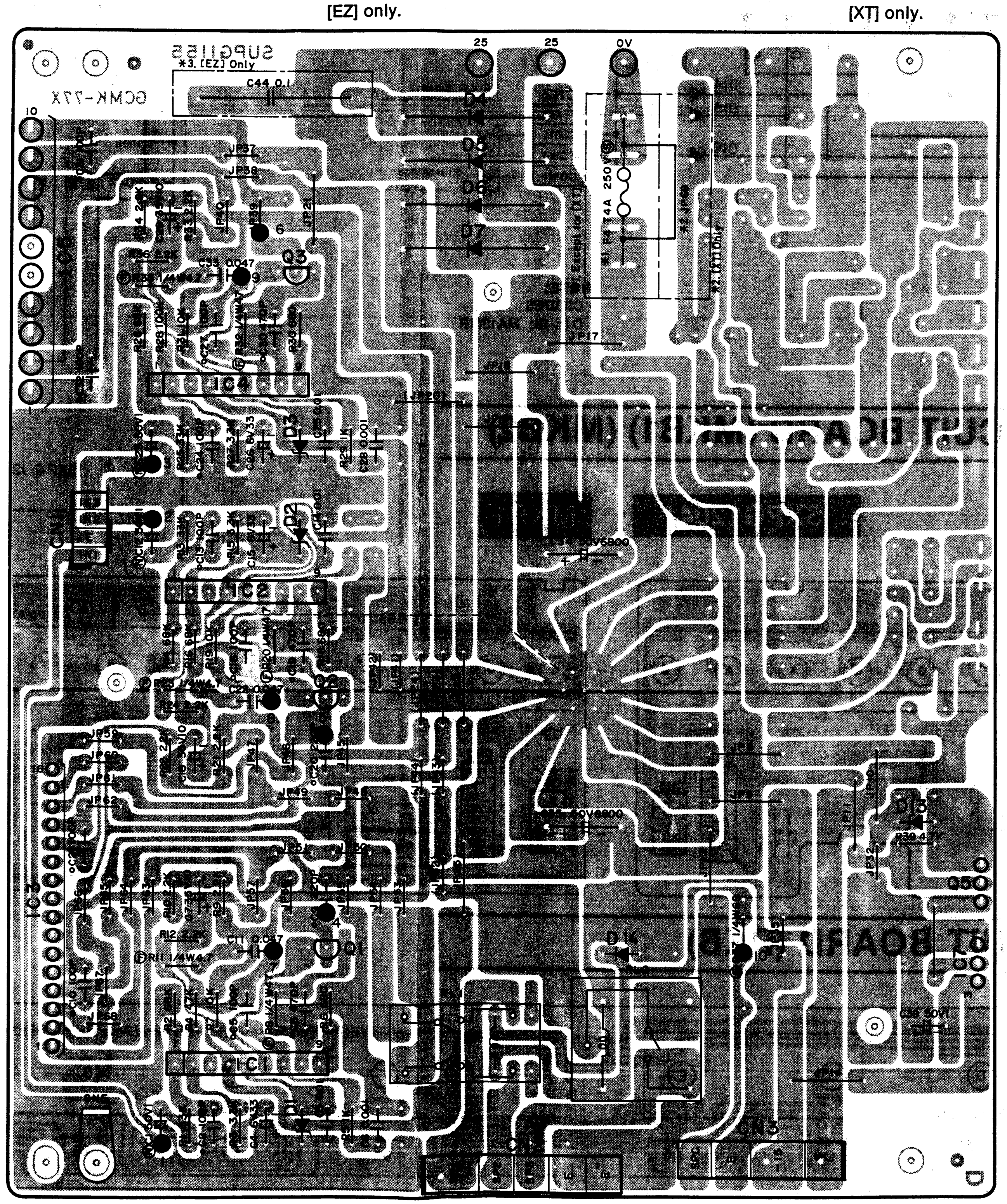
∗3...C44: Products for [EZ] only.

**SXPG11553**

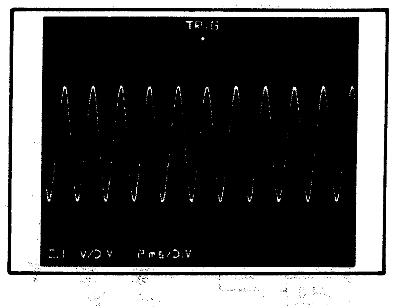
∗1...F4: T4A 250V

**SXPG11554**

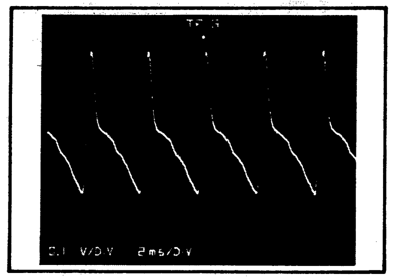
∗2...JP69: Products for [XT] only.


SUPG1155
∗3. [EZ] Only
C44 0.1
GCMK-77X
25
25
0V
D4
D5
D6
D7
∗1 F4 T4A 250V
∗2 JP69
Q3
IC1
IC2
IC3
IC4
Q1
Q50
D13
D14
CN1
CN2
CN3

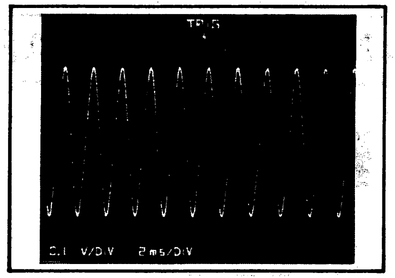
❻



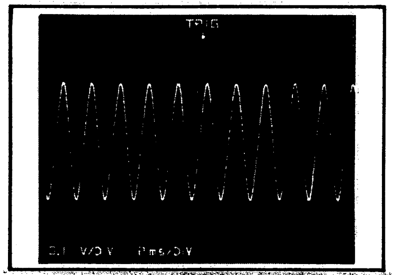
❼



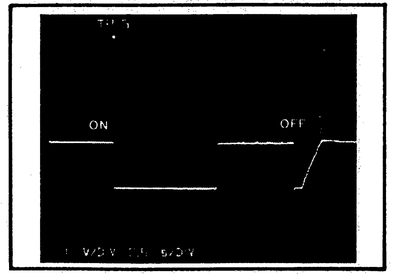
❽



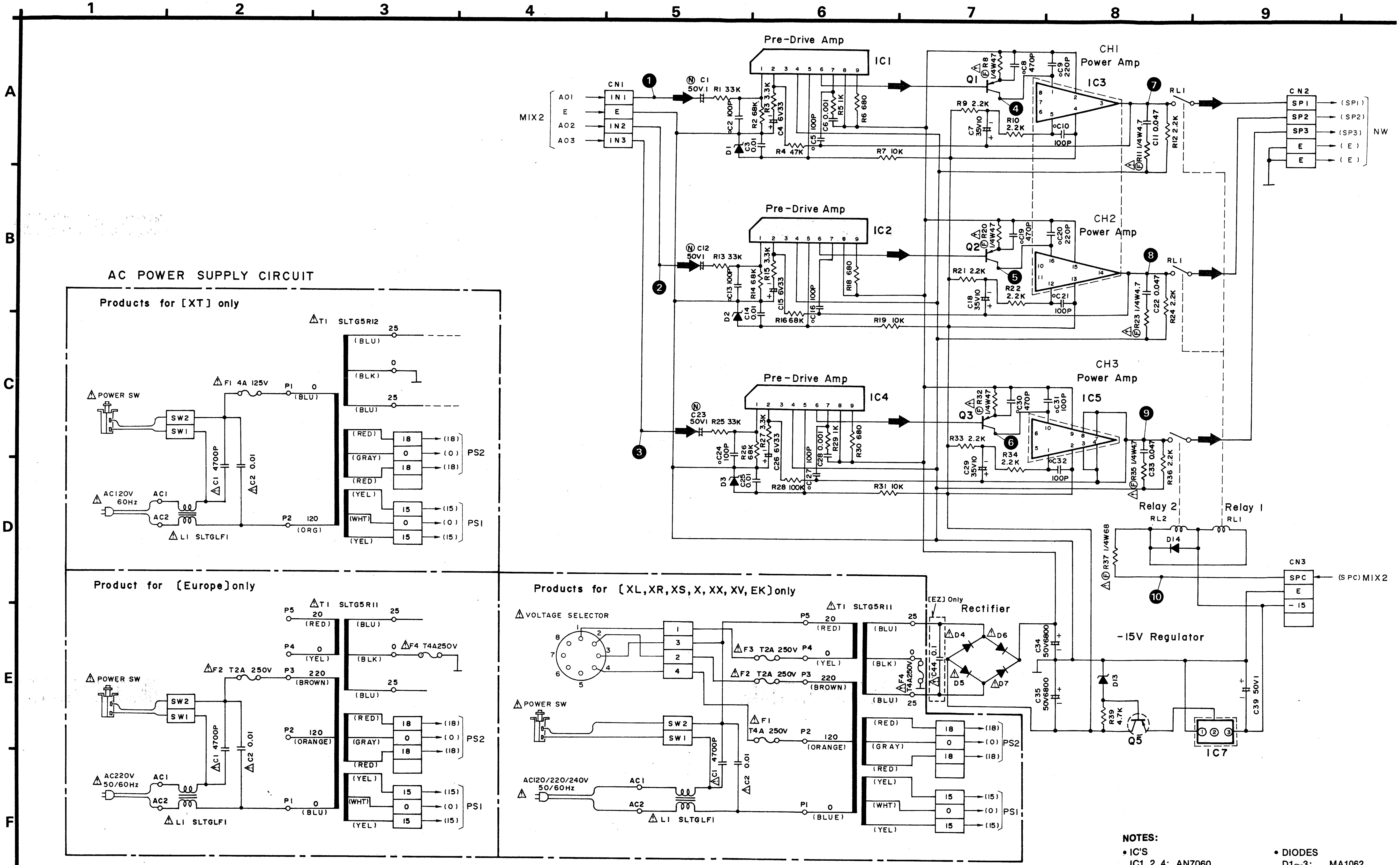
❾



**❿ Power ON—OFF**



# AMP & POWER SUPPLY CIRCUIT DIAGRAM (AS)



1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
Pre-Drive Amp
IC1
IC2
IC4
CH1 Power Amp
IC3
CH2 Power Amp
CH3 Power Amp
IC5
CN1
MIX2
AO1
E
AO2
AO3
IN1
IN2
IN3
C1 50V1
R1 33K
C2 100P
R2 68K
R3 3.3K
C4 6V33
D1
C3 0.01
R4 47K
C5 100P
C6 0.001
R5 1K
R6 680
R7 10K
Q1
R8 1/4W47
C8 470P
C9 220P
R9 2.2K
R10 2.2K
C7 35V10
C10 100P
R11 1/4W4.7
C11 0.047
R12 2.2K
RL1
C12 50V1
R13 33K
C13 100P
R14 68K
R15 3.3K
C15 6V33
D2
C14 0.01
R16 68K
C16 100P
R18 680
R19 10K
Q2
R20 1/4W47
C19 470P
C20 220P
R21 2.2K
R22 2.2K
C18 35V10
C21 100P
R23 1/4W4.7
C22 0.047
R24 2.2K
C23 50V1
R25 33K
C24 100P
R26 68K
R27 3.3K
C26 6V33
D3
C25 0.01
R28 100K
C27 100P
C28 0.001
R29 1K
R30 680
R31 10K
Q3
R32 1/4W47
C30 470P
C31 220P
R33 2.2K
R34 2.2K
C29 35V10
C32 100P
R35 1/4W47
C33 0.047
R36 2.2K
Relay 2
Relay 1
RL2
D14
R37 1/4W68
CN2
SP1
SP2
SP3
E
(SP1)
(SP2)
(SP3)
(E)
NW
CN3
SPC
-15
(SPC) MIX2
AC POWER SUPPLY CIRCUIT
Products for [XT] only
T1 SLTG5R12
POWER SW
SW2
SW1
F1 4A 125V
P1
P2
C1 4700P
C2 0.01
AC120V 60Hz
AC1
AC2
L1 SLTGLF1
(BLU)
(BLK)
(RED)
(GRAY)
(YEL)
(WHT)
(ORG)
25
0
120
18
15
PS2
PS1
Product for (Europe) only
T1 SLTG5R11
P5
P4
P3
20
220
(BROWN)
(ORANGE)
F4 T4A250V
F2 T2A 250V
AC220V 50/60Hz
Products for (XL, XR, XS, X, XX, XV, EK) only
VOLTAGE SELECTOR
F3 T2A 250V
F1 T4A 250V
AC120/220/240V 50/60Hz
(BLUE)
[EZ] Only
Rectifier
D4
D5
D6
D7
F4 T4A250V
C44 0.1
C34 50V6800
C35 50V6800
-15V Regulator
D13
R39 4.7K
Q5
IC7
C39 50V1

**NOTES:**

- IC'S

| | |
|---|---|
| IC1, 2, 4: | AN7060 |
| IC3: | SVIGSTK2028 |
| IC5: | SVIGSTK0029N |
| IC7: | SVIGUPC7915H |

- TRANSISTORS

| | |
|---|---|
| Q1~3: | 2SA1123R |
| Q5: | 2SB950QR |

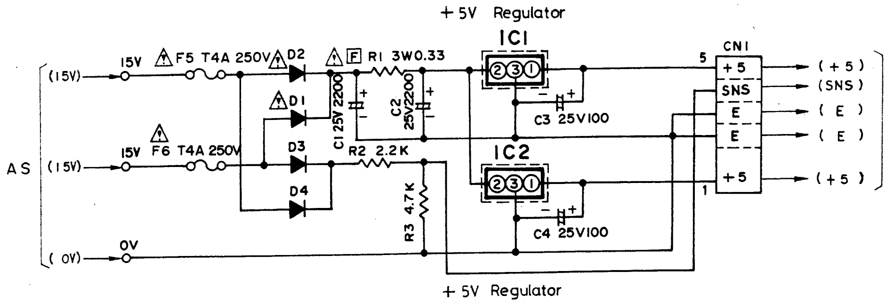
- DIODES

| | |
|---|---|
| D1~3: | MA1062 |
| D4~7: | SVDS3V20 |
| D13: | MA1200 |
| D14: | MA165TA5VT |

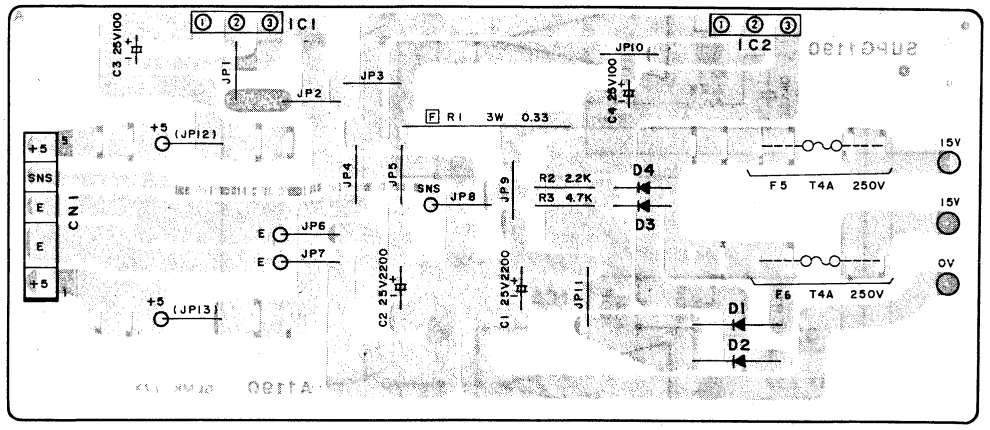
- RELAYS

| | |
|---|---|
| RL1: | SSYGMR5212S |
| RL2: | SSYGMR3112D |

# POWER SUPPLY 1 CIRCUIT (PS1)


+5V Regulator
IC1
IC2
+5V Regulator
AS
(15V)
(15V)
(0V)
15V
15V
0V
F5 T4A 250V
F6 T4A 250V
D1
D2
D3
D4
F R1 3W0.33
C1 25V2200
C2 25V2200
C3 25V100
C4 25V100
R2 2.2K
R3 4.7K
CN1
+5
SNS
E
E
+5
(+5)
(SNS)
(E)
(E)
(+5)
MB

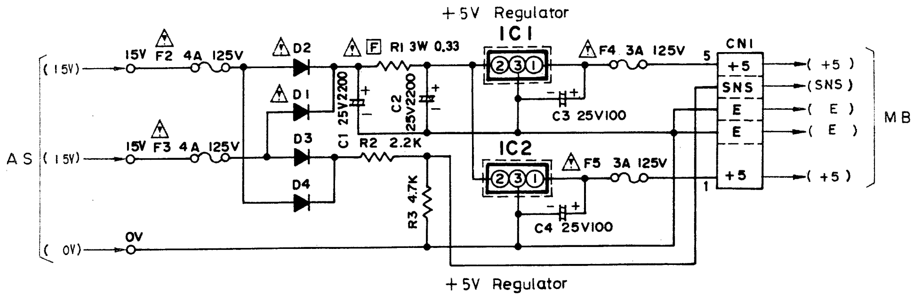
**SXPGA11901**


IC1
IC2
C3 25V100
C4 25V100
JP1
JP2
JP3
JP4
JP5
JP6
JP7
JP8
JP9
JP10
JP11
+5 (JP12)
+5 (JP13)
F R1 3W 0.33
R2 2.2K
R3 4.7K
D1
D2
D3
D4
C1 25V2200
C2 25V2200
F5 T4A 250V
F6 T4A 250V
CN1
+5
SNS
E
E
+5
SNS
15V
15V
0V

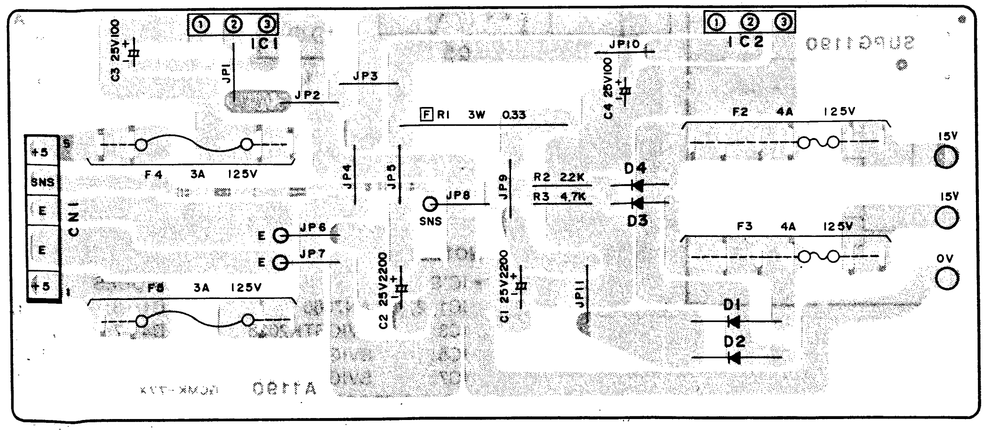
**NOTES:**

- IC'S
  IC1, 2: SVIGSI3052P
- DIODES
  D1, 2: SVDS3V20
  D3, 4: SVDGSR35200V

Products for [XT] only.


+5V Regulator
IC1
IC2
+5V Regulator
AS
(15V)
(15V)
(0V)
15V F2 4A 125V
15V F3 4A 125V
0V
D1
D2
D3
D4
F R1 3W 0.33
F4 3A 125V
F5 3A 125V
C1 25V2200
C2 25V2200
C3 25V100
C4 25V100
R2 2.2K
R3 4.7K
CN1
+5
SNS
E
E
+5
(+5)
(SNS)
(E)
(E)
(+5)
MB

**SXPGA11903**


IC1
IC2
C3 25V100
C4 25V100
JP1
JP2
JP3
JP4
JP5
JP6
JP7
JP8
JP9
JP10
JP11
F R1 3W 0.33
R2 2.2K
R3 4.7K
D1
D2
D3
D4
C1 25V2200
C2 25V2200
F2 4A 125V
F3 4A 125V
F4 3A 125V
F5 3A 125V
CN1
+5
SNS
E
E
+5
SNS
15V
15V
0V

**NOTES:**

- IC'S
  IC1, 2: SVIGSI3052P
- DIODES
  D1, 2: SVDS3V20
  D3, 4: SVDGSR35200V

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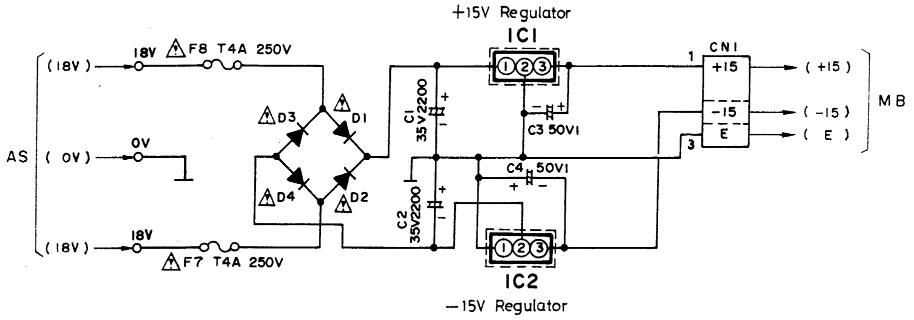
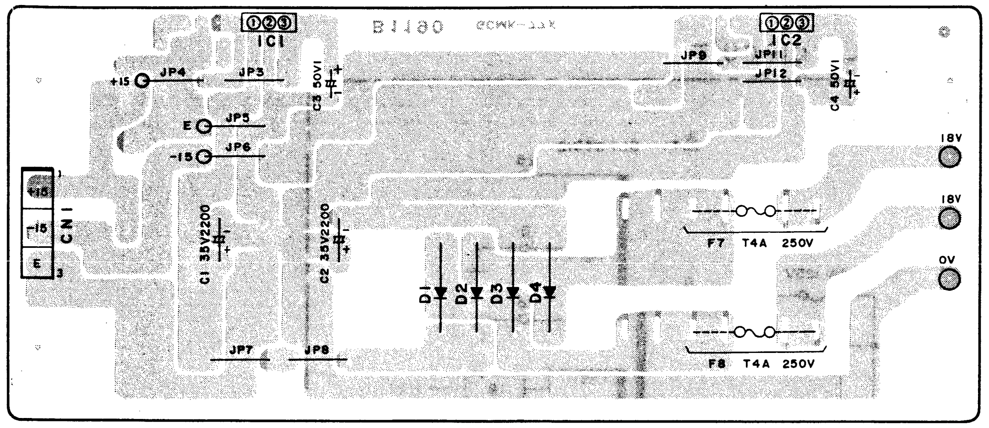
# POWER SUPPLY 2 CIRCUIT (PS2)


+15V Regulator
IC1
IC2
−15V Regulator
AS
(18V)
(0V)
(18V)
18V
0V
18V
F8 T4A 250V
F7 T4A 250V
D1
D2
D3
D4
C1 35V2200
C2 35V2200
C3 50V1
C4 50V1
CN1
+15
−15
E
(+15)
(−15)
(E)
MB

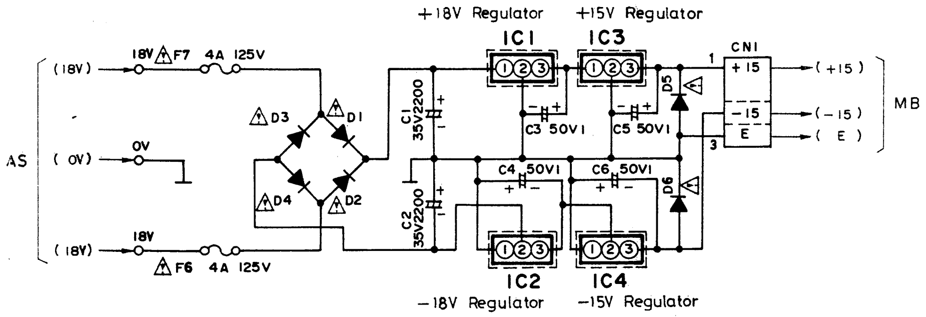
**SXPGB11901**


IC1
IC2
B1160
JP3
JP4
JP5
JP6
JP7
JP8
JP9
JP11
JP12
+15
−15
E
C1 35V2200
C2 35V2200
C3 50V1
C4 50V1
D1
D2
D3
D4
F7 T4A 250V
F8 T4A 250V
18V
18V
0V
+15
−15
E

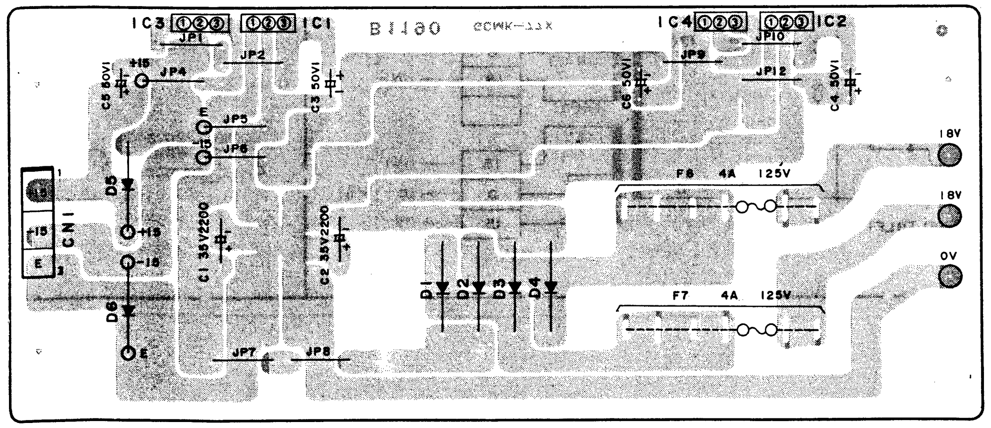
**NOTES:**

- IC'S
  IC1: AN7815
  IC2: SVIGUPC7915H
- DIODES
  D1~4: SVDS2V20

Products for [XT] only.


+18V Regulator
+15V Regulator
IC1
IC3
IC2
IC4
−18V Regulator
−15V Regulator
AS
(18V)
(0V)
(18V)
18V F7 4A 125V
0V
18V
F6 4A 125V
D1
D2
D3
D4
D5
D6
C1 35V2200
C2 35V2200
C3 50V1
C4 50V1
C5 50V1
C6 50V1
CN1
+15
−15
E
(+15)
(−15)
(E)
MB

**SXPGB11903**


IC3
IC1
IC4
IC2
B1160
JP1
JP2
JP4
JP5
JP6
JP7
JP8
JP9
JP10
JP12
C1 35V2200
C2 35V2200
C3 50V1
C4 50V1
C5 50V1
C6 50V1
D1
D2
D3
D4
D5
D6
F6 4A 125V
F7 4A 125V
18V
18V
0V
+15
−15
E

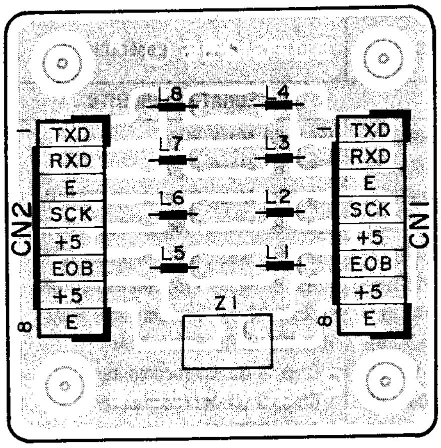
**NOTES:**

- IC'S
  IC1: AN7818
  IC2: SVIGUPC7918H
  IC3: AN7815
  IC4: SVIGUPC7915H
- DIODES
  D1~6: SVDS2V20

# LINE FILTER 1, 2, 3, 4 (LF1) (LF2) (LF3) (LF4)

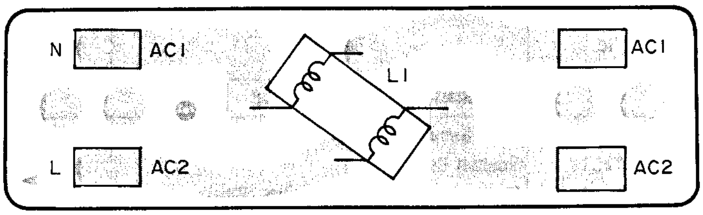
■ **Products for [EZ] only. (See wiring connection Diagram on page Ⅱ-7 Ⅱ-8)**

**LF1** **SXPG12561**


L8
L4
L7
L3
L6
L2
L5
L1
Z1
CN2
CN1
TXD
RXD
E
SCK
+5
EOB
+5
E
1
8

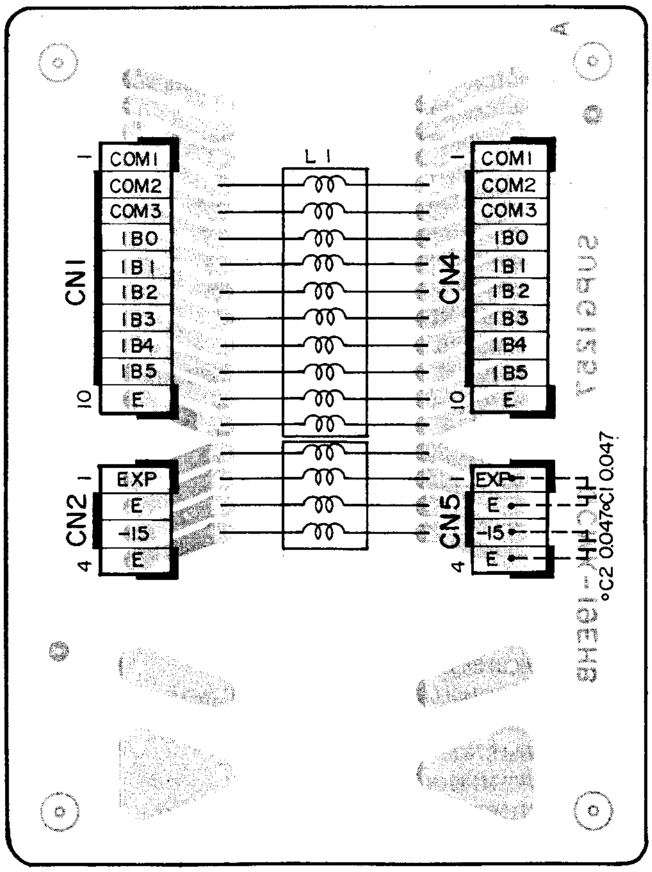
**NOTES:**
- COMPONENT COMBINATION
  Z1: EXATA223S
- COILS
  L1~8: SLCGRN2

**LF3** **SXPG12581**


N
AC1
L1
AC1
L
AC2
AC2

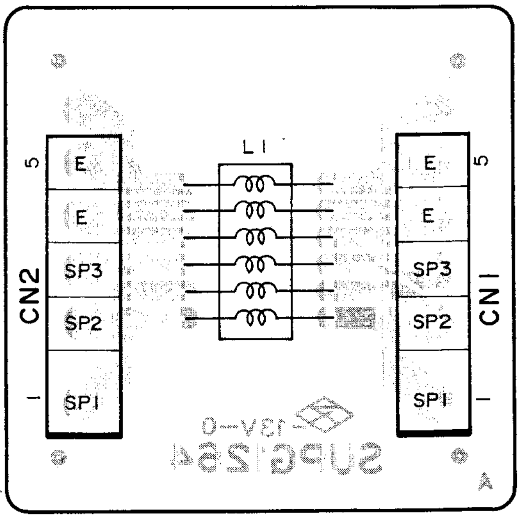
**NOTE:**
- COIL
  L1: SLQG10W2D1

**LF2** **SXPG12572**


L1
CN1
COM1
COM2
COM3
IB0
IB1
IB2
IB3
IB4
IB5
E
1
10
CN4
CN2
EXP
E
-15
E
4
CN5
C1 0.047
C2 0.047

**NOTE:**
- COILS
  L1: SLQG10W10D1
  L3: SLQG13W4D1

**LF4** **SXPG12641**


L1
CN2
E
E
SP3
SP2
SP1
5
1
CN1

**NOTE:**
- COIL
  L1: SLQG13W6D1

# REPLACEMENT PARTS LIST...Electrical Parts

**Notes:**

1. Printed circuit boards are supplied only during the period of production.
2. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. ○ mark are new parts
5. For part No. with area mark, check the area when placing an order.

## ■ ELECTRICAL PARTS

| | Part No. | Description | Per/Set |
|---|---|---|---|
| | | **PRINTED CIRCUIT BOARDS** | |
| ○ | SXPG12063 | Tone.Generator Module (TGM) | 1 |
| | ⌈SXPG12311 | Sustain Control (SC) | (3) |
| ○ | ⌊SXPG12341 | Percussive TG Sustain Control (PSC) | (1) |
| ○ | SXPG12073 | System Assigner (SAS) | 1 |
| | SXPGA11742 | Organ (ORG) | 1 |
| ○ | SXPGB11743 | Tone Generator (TG) | 1 |
| ○ | SXPG11294 | Percussive Tone (PCT) | 1 |
| ○ | SXPGA12092 | Orchestral Presets (OPS) | 1 |
| ○ | SXPGB12092 | Selector (SEL) | 1 |
| | SXPG11684 | Accompaniment (ACC) | 1 |
| ○ | SXPG11326 | Solo Synthe Presets (SPS) | 1 |
| ○ | SXPG113281 | Bass (BAS) | 1 |
| ○ | SXPG12172 | Drum Percussion (DP) | 1 |
| | SXPGA12331 | Tremolo & Phaser Modulation (LPM) | 1 |
| | SXPGB12331 | Celeste & String Ensemble (CSM) | 1 |
| ○ | SXPGA12142 | Mixing 1 (MIX 1) | 1 |
| ○ | SXPGB12142 | Mixing 2 (MIX 2) | 1 |
| ○ | SXPG121561 | Mother Board (MB) | 1 |
| ○ | SXPG12131 | Percussive Presets (PPS) | 1 |
| ○ | SXEG21A | Musical Display (MD) | 1 |
| ○ | SXPG12193 | Upper Control Panel Left (CPL) | 1 |
| ○ | SXPG12203 | Upper Control Panel Right (CPR) | 1 |
| | SXPGA12221 | Control Panel Switch Left (CPSL) | 1 |
| | SXPGB12221 | Control Panel Switch Right (CPSR) | 1 |
| | SXPG12032 | Manual Keyboard 1 (MKB 1), Upper | 1 |
| | SXPG12031 | Manual Keyboard 1 (MKB 1), Lower | 1 |
| | SXPG12041 | Manual Keyboard 2 (MKB 2) | 2 |
| | SXPG12281 | Memory Pack Control (MPC) | 1 |
| ○ | SXPG12667 | Jack 1 (JACK 1) | 1 |
| ○ | SXPG12723 **EZ** | Jack 1 (JACK 1), [EZ] only | 1 |
| | SXPG12161 | Jack 2 (JACK 2) | 1 |
| | SXPG103211 | Expression (EXP) | 1 |
| | SXPG11702 | Pedal Keyboard (PKB) | 1 |
| ○ | SXPG123521 | Network (NW) | 1 |
| | SXPGA11901 | Power Supply 1 (PS 1) | 1 |
| | SXPGB11901 | Power Supply 2 (PS 2) | 1 |
| | SXPGA11903 **XT** | Power Supply 1 (PS 1) } [XT] only | 1 |
| | SXPGB11903 **XT** | Power Supply 2 (PS 2) } | 1 |
| | SXPG11553 | Amp & Power Supply (AS) | 1 |
| | SXPG11554 **XT** | Amp & Power Supply (AS), [XT] only | 1 |
| | SXPG11556 **EZ** | Amp & Power Supply (AS), [EZ] only | 1 |
| | SXPG11661 | AC Power Supply (ACP) | 1 |
| | SXPG11663 | AC Power Supply (ACP), [EK], [XL], [XR], [XS], [X], [XX], [XV] only | 1 |
| | SXPG11672 **XT** | AC Power Supply (ACP), [XT] only | 1 |
| ○ | SXPG12561 **EZ** | Line Filter (LF 1) } [EZ] only | 1 |
| ○ | SXPG12572 **EZ** | Line Filter (LF 2) } | 1 |
| ○ | SXPG12581 **EZ** | Line Filter (LF 3) } | 1 |
| ○ | SXPG12641 **EZ** | Line Filter (LF 4) } | 1 |

| | Part No. | Description | | Per/Set |
|---|---|---|---|---|
| | | **INTEGRATED CIRCUITS** | | |
| | SVIG3256PC35 | 256K Bit Mask ROM | DP | 1 |
| | SVIG3256PC36 | 256K Bit Mask ROM | DP | 1 |
| | MN23128PGE | 128K Bit Mask Programmable ROM | SAS | 1 |
| | MN23128PGF | 128K Bit Mask Programmable ROM | SAS | 1 |
| ○ | MN23128PGG | 128K Bit Mask Programmable ROM | SAS | 1 |
| | SVIG23128196 | 128K Bit Mask Programmable ROM | SPS | 1 |
| | SVIG2364096 | 64K Bit Mask Programmable ROM | BAS | 1 |
| | SVIGM512820R | 16K Bit CMOS Static RAM | SAS | 1 |
| | SVIG7811G077 | 1 Chip, 8 Bit Microcomputer | SAS | 1 |
| | SVIGM8041145 | 1 Chip, 8 Bit Microcomputer | OPS | 1 |
| | SVIGM8049569 | 1 Chip, 8 Bit Microcomputer | SPS, BAS | 2 |
| | SVIG65002014 | Gate Array | SAS | 1 |
| | SVIG65002017 | Gate Array | SAS | 1 |
| | SVIG65002018 | Gate Array | SEL | 1 |
| | SVIG65002019 | Gate Array | SPS, BAS | 2 |
| | SVIG65010021 | Gate Array | DP | 1 |
| | SVIGM74LS00 | Quadruple 2-Input Positive NAND Gates | SAS | 1 |
| | SVIGM74LS05 **EZ** | Hex Inverters with Open Collector Output | JACK 1 | 1 |
| ○ | SVIGM74LS09 | Quadruple 2-Input Positive AND Gates | JACK 1 | 1 |
| | SVIGM74LS32 | Quadruple 2-Input Positive OR Gates | SAS | 1 |
| | SVIGM74LS138 | Decoder | SAS | 2 |
| | SVIGMSM4011 | Quadruple 2-Input NAND Gates | LPM, CSM | 9 |
| | SVIGTC40H002 | Quadruple 2-Input Positive NOR Gates | ACC | 1 |
| | SVIGTC40H004 | Hex Inverters | SAS, TG<br>OPS | 3 |
| | SVIGTC40H374 | Octal D-Type Flip-Flops | ACC, PPS | 3 |
| | SVIGTC40H393 | 4 Bit Binary Counter | TG | 1 |
| | SVIGTC4013BP | Dual D-Type Flip-Flops | ACC | 1 |
| | SVIGTC40174B | Hex D-Type Flip-Flops | PCT | 1 |
| | SVIGTC4053BP | 2 Channel Multiplexer | OPS | 1 |
| | SVIGHD14051B | 8 Channel Multiplexer | OPS | 1 |
| | SVIGHD14046B | Phase-Locked Loop | SPS, BAS | 2 |
| | SVIGM53216 | Hex Inverters | SAS, ACC | 2 |
| | SVIGM53217 | Hex Buffers (Open Collector) | | 20 |
| | SVIGM5216LL | Operational Amplifier | MIX 1<br>MIX 2 | 4 |
| | SVIGM5218L | Operational Amplifier | | 93 |
| | SVIGNJM082D | Operational Amplifier | OPS, SPS<br>BAS, DP | 4 |
| | SVIGUPC624C | 8 Bit D-A Converter | SPS, BAS<br>DP | 3 |
| | SVIGUPC1252H | VCA, for NR System | OPS, MIX 1<br>MIX 2 | 11 |
| | SVIGUPC1253H | RMS Level Censor, for NR System | OPS, MIX 1 | 4 |
| | SVIGBA6110 | VCA (Voltage Controlled Amplifier) | | 14 |
| | SVIGBA6704 | VCF (Voltage Controlled Filter) | OPS, ACC | 2 |
| | SVIGUPD6303G | Top Octave Synthe LSI | TGM | 1 |
| | SVIGUPD6304G | Tone Generator LSI | TGM | 4 |
| | SVIGUPD4066B | Quadruple Bilateral Switch | | 19 |
| | SVIGTA61 | Transistor Array | CPSL<br>CPSR | 2 |
| | SVIGLC7800 | I/O Expander | MKB 2 | 2 |
| | SVIGLM1894N | Noise Reduction | MIX 2 | 2 |
| | MN15621PGA | 4 Bit 1 Chip Microcomputer | | 7 |
| | MN15621PGB | 4 Bit 1 Chip Microcomputer | MPC | 1 |
| | MN3006 | BBD for Audio Signal Delays (128-stage) | LPM, CSM | 5 |
| | MN3004 | BBD for Audio Signal Delays (512-stage) | CSM | 3 |

| | Part No. | Description | | Per/ Set |
|---|---|---|---|---|
| | AN6913 | Dual Comparator | LPM, MIX 1 MIX 2 | 3 |
| | AN6552F | Operational Amplifier | SPS | 1 |
| | AN7060 | Power Amp Driver | PS | 3 |
| | AN7815 | Voltage Regulator | PS 2 | 1 |
| | SVIGSI3052P | Voltage Regulator | PS 1 | 2 |
| | SVIGUPC7915H | Voltage Regulator | AS, PS 2 | 2 |
| | SVIGSTK0029N | Power IC | AS | 1 |
| | SVIGSTK2028 | Power IC | AS | 1 |
| | **TRANSISTORS** | | | |
| | 2SA830B | | | 8 |
| | 2SA1015GR | | | 24 |
| | 2SA1123R | | | 3 |
| | 2SB950QR | | | 1 |
| | 2SC1047C | | | 18 |
| | 2SC1685R | | | 1 |
| | 2SC1815GR | | | 8 |
| | 2SC2320LFG | | | 31 |
| | 2SJ40CD | FET | | 15 |
| | 2SK381CD | | | 2 |
| | **DIODES** | | | |
| S | MA162 | MA150IR | | 162 |
| | MA165TA5VT | | | 182 |
| | MA1120M | Zener | | 6 |
| | MA1036H | Zener | | 1 |
| | MA1062 | Zener | | 3 |
| | MA1200 | Zener | | 1 |
| | SVDS2V20 ⚠ | Rectifier | | 6 |
| | SVDS3V20 ⚠ | Rectifier | | 6, 8 [XT] |
| | SVDGSR35200V | | | 2 |
| | SVDGRK14 | | | 1 |
| | **QUARTZ & CERAMIC OSCILLATORS** | | | |
| | SVQG43U1200A | 12 MHz, Quartz Oscillators | | 1 |
| | SVQGCSA110MT | 11 MHz, Ceramic Oscillators | | 2 |
| | SVQGCSA600MT | 6 MHz, Ceramic Oscillators | | 1 |
| | EF0A4R5M01A | 4.5 MHz, Ceramic Oscillators | | 8 |
| | **COILS** | | | |
| | ELQS180KB | 18μH, Coil (Master Clock OSC) | | 2 |
| | SLCSC471KU | 0.47 mH, Coil | | 2 |
| ○ | SLQG80W13A | 80μH | | 1 |
| ○ | SLQG13W6D1 | 13.5μH (×6) | | 1 |
| ○ | SLCGRN12 EZ | | | 8 |
| ○ | SLQG10W10D1 EZ | 10μH (×10) | | 1 |
| ○ | SLQG13W4D1 EZ | 13.5μH (×4) } [EZ] only | | 1 |
| ○ | SLQG10W2D1 EZ | 10μH (×2) | | 1 |
| ○ | SLQG13W6D1 EZ | 13.5μH (×6) | | 1 |
| | **CDS** | | | |
| | SVEG5 | Light Sensitive Device | | 1 |

| | Part No. | Description | Per/ Set |
|---|---|---|---|
| | **LED'S, LAMP** | | |
| | LN29RP | LED (Power Indicator) | 1 |
| | SEL2210SLFM1 | LED (Red) | 149 |
| | SEL2710KLFM1 | LED (Yellow) | 26 |
| | XAMR55P | Lamp, Expression | 1 |
| | **SWITCHES** | | |
| | ESB90712V ⚠ | Power Switch | 1 |
| | ESE37209 ⚠ | Voltage Selector, [EK], [XS], [XL], [XR], [X], [XX], [XV] only | 1 |
| | SSHG1029A | Switch, for Tang Type | 44 |
| | SSHG1030A | Switch, for Push Type | 164 |
| | SSHG1020A | Knee Lever Push Switch | 1 |
| | SSLG1005A | Knee Lever Leaf Switch | 1 |
| | SSSG2001A | Line Out Channel Selector Switch | 2 |
| | **VARIABLE RESISTORS** | | |
| | EVD3520B24G | 20 KΩ B, Tempo Control | 1 |
| | EWHD5A576A54 | 50 KΩ A, Mic Volume | 1 |
| | **SEMI-FIXED RESISTORS** | | |
| | EVN60AA00B54 | 50 KΩ | 2 |
| | EVN60AA00B24 | 20 KΩ | 3 |
| | EVN60AA00B14 | 10 KΩ | 5 |
| | EVN60AA00B23 | 2 KΩ | 2 |
| | **COMPONENTS COMBINATIONS** | | |
| | SREG6A0511MM | Custom Block Resistor | 4 |
| ○ | SREGLN4Y474J | 470 KΩ×4 | 2 |
| ○ | SREGLN4Y565J | 5.6 MΩ×4 | 2 |
| | EXBP84222MM | 2.2 KΩ×4, Block Resistor | 1 |
| | EXBP86122MM | 1.2 KΩ×6, Block Resistor | 1 |
| | EXBP86103MM | 10 KΩ×6, Block Resistor | 1 |
| | EXBP88102MM | 1 KΩ×8, Block Resistor | 1 |
| | EXBP88122MM | 1.2 KΩ×8, Block Resistor | 3 |
| | EXBP88222MM | 2.2 KΩ×8, Block Resistor | 4 |
| | EXBP88472MM | 4.7 KΩ×8, Block Resistor | 2 |
| | EXBP88103MM | 10 KΩ×8, Block Resistor | 2 |
| | EXBP88334MM | 330 KΩ×8, Block Resistor | 2 |
| | EXBP810102MM | 1 KΩ×10, Block Resistor | 1 |
| | EXBP811102MM | 1 KΩ×11 Block Resistor | 1 |
| | EXBP812102MM | 1 KΩ×12, Block Resistor | 1 |
| | EXATA223S | Noise Suppression Filter | 9, 10 [EZ] |
| | **JACKS** | | |
| | SJJG210A | Mic Jack | 1 |
| | SJJG220A | Line Out Jack, Aux Jack | 4 |
| | SJJG230A | Line Out Terminal | 1 |
| | SJJG240A | Headphone Jack | 1 |
| | SJJG250A | F.D. Jack | 1 |

| | Part No. | Description | Per/ Set |
|---|---|---|---|
| | **RELAYS** | | |
| | SSYGMR5212S | Relay | 3 |
| | SSYGMR3112D | Relay | 1 |
| | **SPEAKERS** | | |
| | EAS30PL110S | 30cm, 6Ω | 1 |
| | EAS20PM224SA | 20cm, 8Ω | 2 |
| ○ | EAS20PM224SC | 20cm, 8Ω | 1 |
| | EAS6HH11S | 6cm, 6Ω | 2 |
| | **FUSES** | | |
| | XBA2C20TR0 ⚠ | T 2A, 250V } Europe only | 1 |
| | XBA2C40TR0 ⚠ | T 4A, 250V | 5 |
| | XBA2C20TR0 ⚠ | T 2A, 250V } [EK], [XL], [XR], [XS], [X], [XX], [XV] only | 2 |
| | XBA2C40TR0 ⚠ | T 4A, 250V | 6 |
| | XBA1F30NU14 ⚠ | 3A, 125V } [XT] only | 2 |
| | XBA1F40NU14 ⚠ | 4A, 125V | 5 |
| | **TRANSFORMERS, LINE FILTER** | | |
| | SLTG5R11 ⚠ | Power Transformer | 1 |
| | SLTG5R12 ⚠ | Power Transformer, XT only | 1 |
| | SLTGLF1 ⚠ | Line Filter | 1 |
| | **AC CORDS, PLUG** | | |
| | SJAG24 ⚠ | AC Cord | 1 |
| | SJAG23 ⚠ | AC Cord, XL XR only | |
| | SJAG25 ⚠ | AC Cord, EK XS only | 1 |
| | SJAG26 ⚠ | AC Cord, X XX XV only | 1 |
| | SJAG22 ⚠ | AC Cord, XT only | 1 |
| | SJAG50 ⚠ | AC Cord, EZ only | 1 |
| | SJP5213-1 ⚠ | Attachment Plug, X XX XV only | 1 |
| | **ASSEMBLY PARTS** | | |
| | SXVG6010B | Expression Unit | 1 |
| | SXVG3031A | Knee Lever Unit | 1 |
| | SJUG25005N | Reverb Unit | 1 |
| | SHRG550 | Cushion for Reverb Unit | 2 |
| | **WIRING PARTS (See wiring connection diagram on page II-7, II-8)** | | |
| ○ | SWKG056ZH | Connector, with Wire | 1 |
| ○ | SWKG0225ZA | Connector, with Wire | 1 |
| | SWKG0318ZA | Connector, with Wire | 1 |
| | SWKG0420ZA | Connector, with Wire | 1 |
| ○ | SWKG0422ZC | Connector, with Wire, [EK], [XS], [XL], [XR], [X], [XX], [XV] only | 1 |
| ○ | SWKG0423LSC | Connector, with Wire | 1 |
| | SWKG0430LTB | Connector, with Wire | 1 |
| ○ | SWKG0436LSB | Connector, with Wire | 1 |
| ○ | SWKG0465ZA | Connector, with Wire | 1 |
| ○ | SWKG0466ZA | Connector, with Wire | 1 |

| | Part No. | Description | Per/ Set |
|---|---|---|---|
| ○ | SWKG0655ZA | Connector, with Wire | 1 |
| ○ | SWKG0839LSB | Connector, with Wire | 1 |
| ○ | SWKG0862LSA | Connector, with Wire | 1 |
| ○ | SWKG0856LSA EZ | Connector, with Wire, [EZ] only | 1 |
| ○ | SWKG1040ZA | Connector, with Wire | 1 |
| ○ | SWKG1041ZA EZ | Connector, with Wire, [EZ] only | 1 |
| ○ | SWKG0461LSA EZ | Connector, with Wire, [EZ] only | 1 |
| ○ | SWKG0514ZB EZ | Connector, with Wire, [EZ] only | 1 |
| ○ | SWKG1017LSB EZ | Connector, with Wire, [EZ] only | 1 |
| ○ | SWKG1310LSA | Connector, with Wire | 1 |
| ○ | SWEG270A EZ | Wire, [EZ] only | 2 |

## ■ DIGITAL MEMORY PACK

| Part No. | Description | Per/ Set |
|---|---|---|
| **SY-P2** | | |
| SXPG12241 | Memory Pack P.C.B. | 1 |
| SVIGM512820R | 16K Bit CMOS Static RAM | 2 |
| MA165TA5VT | Diode | 1 |
| EXBEQ10104MM | Block Resistor | 2 |
| SSSG1001A | Switch | 2 |
| ERDS2TJ472 | 4.7KΩ | 3 |
| ERDS2TJ103 | 10KΩ | 1 |
| ECSF35E1GE | Ⓣ 35V, 1μF | 1 |
| **SY-P3** | | |
| SXPG12242 | Memory Pack P.C.B. | 1 |
| SVIG6264LP15 | 64K Bit CMOS Static RAM | 1 |
| MA165TA5VT | Diode | 1 |
| EXBEQ10104MM | Block Resistor | 1 |
| EXBEQ12104MM | Block Resistor | 1 |
| SSSG1001A | Switch | 2 |
| ERDS2TJ472 | 4.7KΩ | 4 |
| ERDS2TJ103 | 10KΩ | 1 |
| ECSF35E1GE | Ⓣ 35V, 1μF | 1 |

## ■ Numbering System of Resistor

| Resistor Type | Wattage | Tolerance |
|---|---|---|
| ERD : Carbon | S2 : 1/4W | F : ±1% |
| ERD—F : Carbon Flame-Proof | 2 : 1/4W | G : ±2% |
| ERO : Metal Film | 10 : 1/8W | J : ±5% |
| | 25 : 1/4W | K : ±10% |
| | 50 : 1/2W | |
| ERG : Metal Oxide | 1 : 1W | |
| ERQ : Metal Oxide Film, Flame-proof | 3 : 3W | |

**Example**

| ERD | S2 | T | J | 101 |
|---|---|---|---|---|
| Type | Wattage | Shape | Tolerance | Value |

| ERD | 2 | F | C | G | 101 |
|---|---|---|---|---|---|
| Type | Wattage | Flame Proof | Fuse Type | Tolerance | Value |

| ERO | 10 | T | K | F | 2201 |
|---|---|---|---|---|---|
| Type | Wattage | Shape | Peculiarity use | Tolerance | Value |

| ERG | 1 | AN | J | 121 |
|---|---|---|---|---|
| Type | Wattage | Shape | Tolerance | Value |

| ERQ | 3 | C | K | R33 |
|---|---|---|---|---|
| Type | Wattage | Flame Proof | Tolerance | Value |

## ■ Numbering System of Capacitor

| Capacitor Type | Symbol Mark | Voltage | | Tolerance |
|---|---|---|---|---|
| | | ECEA Type | Others | |
| ECEA (T) : Electrolytic | | 0J : 6.3V | 1H : 50V | ECEA Type : ±20% |
| ECEA—N : Non-Polar Electrolytic | Ⓝ | 1C : 16V | 1E : 25V | J : ±5% |
| ECEA—Y : Non-Polar Electrolytic | Ⓨ | 1E : 25V | 1V : 35V | K : ±10% |
| ECEA—M : Electrolytic, MSR Series | (MS) | 1V : 35V | 50 : 50V | M : ±20% |
| ECEA—Z : Electrolytic, Z Series | Ⓩ | 1H : 50V | | |
| ECEA—K : Electrolytic, miniature type | Ⓚ | 50Y : 50V | | |
| ECQV : TF Capacitor | (TF) | 50M : 50V | | |
| ECQM : Polyester | | 16M : 16V | | |
| ECC : Ceramic | ○ | 50Z : 50V | | |
| ECK : Ceramic | ○ | | | |
| ECS : Tantalume Solid Electrolytic | Ⓣ | | | |

**Example**

| ECEA | 0J | U | 330 |
|---|---|---|---|
| Type | Voltage | Peculiarity use | Value |

| ECEA (T) | 50 | M (Z) | R47 | R |
|---|---|---|---|---|
| Type | Voltage | Peculiarity use | Value | Special use |

| ECQV (M) | 1H | 102 | J |
|---|---|---|---|
| Type | Voltage | Value | Tolerance |

| ECC (K) | R | 1H | 220 | J |
|---|---|---|---|---|
| Type | Shape | Voltage | Value | Tolerance |

| ECS | F | 1V | Z | 105 |
|---|---|---|---|---|
| Type | Shape | Voltage | Peculiarity use | Value |

| Part No. | Description | Per/ Set |
|---|---|---|
| | **RESISTORS** | |
| ERDS2TJ100 | 10Ω | |
| ERDS2TJ120 | 12Ω | |
| ERDS2TJ150 | 15Ω | |
| ERDS2TJ180 | 18Ω | |
| ERDS2TJ220 | 22Ω | 4 |
| ERDS2TJ270 | 27Ω | |
| ERDS2TJ330 | 33Ω | 1 |
| ERDS2TJ390 | 39Ω | |
| ERDS2TJ470 | 47Ω | 60 |
| ERDS2TJ560 | 56Ω | |
| ERDS2TJ680 | 68Ω | 1 |
| ERDS2TJ820 | 82Ω | |
| ERDS2TJ101 | 100Ω | 5 |
| ERDS2TJ121 | 120Ω | |
| ERDS2TJ151 | 150Ω | 14 |
| ERDS2TJ181 | 180Ω | |
| ERDS2TJ221 | 220Ω | 3 |
| ERDS2TJ271 | 270Ω | |
| ERDS2TJ331 | 330Ω | 11 |
| ERDS2TJ391 | 390Ω | |
| ERDS2TJ471 | 470Ω | 4 |
| ERDS2TJ561 | 560Ω | 1 |
| ERDS2TJ681 | 680Ω | 6 |
| ERDS2TJ821 | 820Ω | 4 |
| ERDS2TJ102 | 1KΩ | 74 |
| ERDS2TJ122 | 1.2KΩ | 59 |
| ERDS2TJ152 | 1.5KΩ | 8 |
| ERDS2TJ182 | 1.8KΩ | |
| ERDS2TJ222 | 2.2KΩ | 36 |
| ERDS2TJ272 | 2.7KΩ | 2 |
| ERDS2TJ332 | 3.3KΩ | 52 |
| ERDS2TJ392 | 3.9KΩ | |
| ERDS2TJ472 | 4.7KΩ | 132, 134 [EZ] |

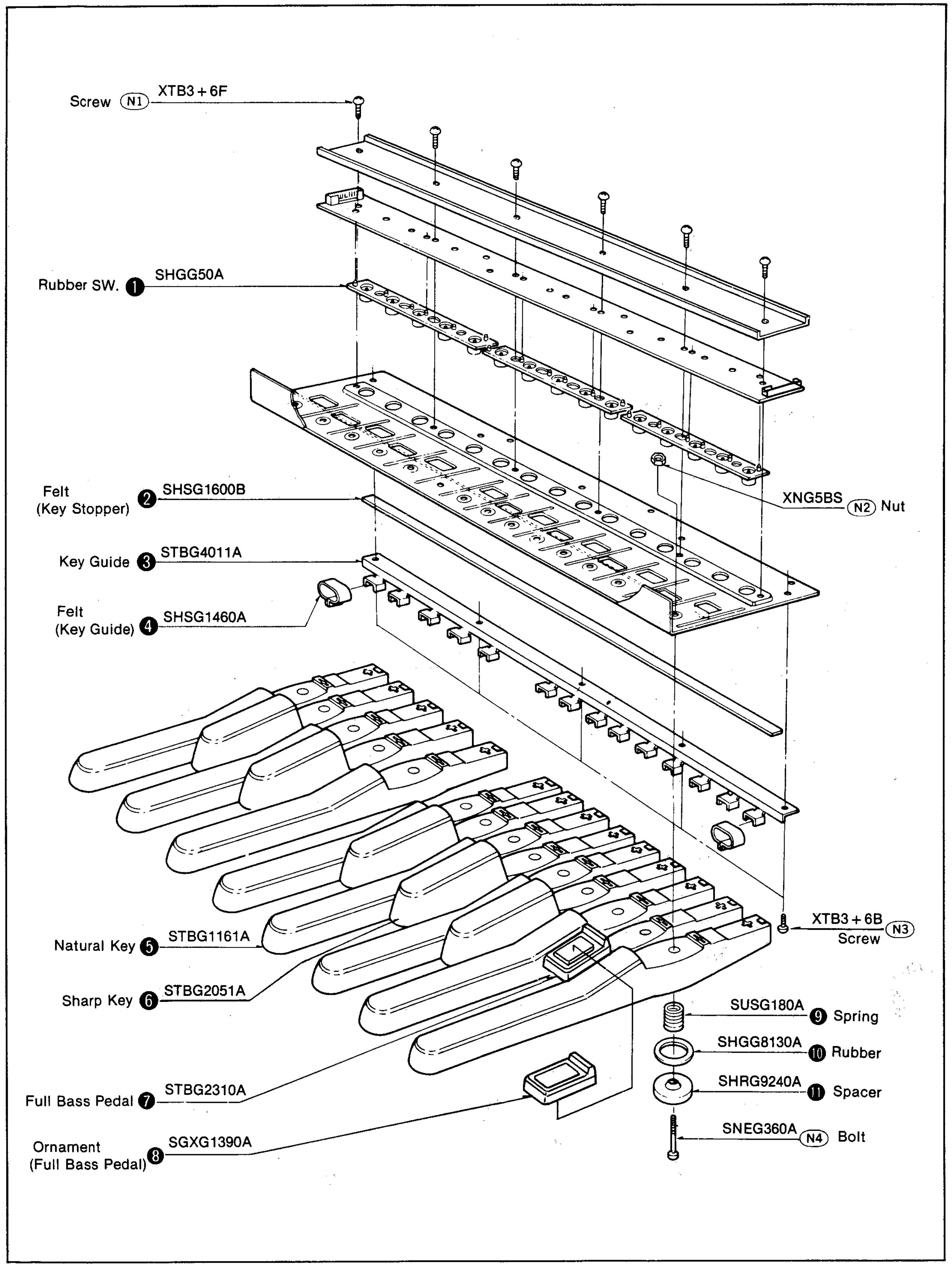
| Part No. | Description | Per/ Set |
|---|---|---|
| ERDS2TJ562 | 5.6KΩ | 4 |
| ERDS2TJ682 | 6.8KΩ | 22 |
| ERDS2TJ822 | 8.2KΩ | 10 |
| ERDS2TJ103 | 10KΩ | 126 |
| ERDS2TJ123 | 12KΩ | 20 |
| ERDS2TJ153 | 15KΩ | 57 |
| ERDS2TJ183 | 18KΩ | 24 |
| ERDS2TJ223 | 22KΩ | 66 |
| ERDS2TJ273 | 27KΩ | 24 |
| ERDS2TJ333 | 33KΩ | 87 |
| ERDS2TJ393 | 39KΩ | 17 |
| ERDS2TJ473 | 47KΩ | 87 |
| ERDS2TJ563 | 56KΩ | 31 |
| ERDS2TJ683 | 68KΩ | 38 |
| ERDS2TJ823 | 82KΩ | 42 |
| ERDS2TJ104 | 100KΩ | 102 |
| ERDS2TJ124 | 120KΩ | 20 |
| ERDS2TJ154 | 150KΩ | 64 |
| ERDS2TJ184 | 180KΩ | 20 |
| ERDS2TJ224 | 220KΩ | 45 |
| ERDS2TJ274 | 270KΩ | 7 |
| ERDS2TJ334 | 330KΩ | 38 |
| ERDS2TJ394 | 390KΩ | 4 |
| ERDS2TJ474 | 470KΩ | 31 |
| ERDS2TJ564 | 560KΩ | 1 |
| ERDS2TJ684 | 680KΩ | 5 |
| ERDS2TJ824 | 820KΩ | 1 |
| ERDS2TJ105 | 1MΩ | 23 |
| ERDS2TJ125 | 1.2MΩ | |
| ERDS2TJ155 | 1.5MΩ | 26 |
| ERDS2TJ185 | 1.8MΩ | |
| ERDS2TJ225 | 2.2MΩ | 9 |
| ERDS2TJ275 | 2.7MΩ | |
| ERDS2TJ335 | 3.3MΩ | |

|  | Part No. | Description | Per/ Set |
|---|---|---|---|
|  | ERDS2TJ395 | 3.9MΩ |  |
|  | ERDS2TJ475 | 4.7MΩ |  |
|  | ERDS2TJ565 | 5.6MΩ |  |
|  | ERDS2TJ685 | 6.8MΩ |  |
|  | ERDS2TJ825 | 8.2MΩ |  |
|  | ERO10TKF2201 | 1/8W, 2.2KΩ, ±1% | 2 |
|  | ERD2FCJ4R7 ⚠ | 🄵 1/4W, 4.7Ω, Fuse Type | 8 |
|  | ERD2FCJ6R8 ⚠ | 🄵 1/4W, 6.8Ω, Fuse Type | 1 |
|  | ERD2FCG100 ⚠ | 🄵 1/4W, 10Ω, Fuse Type | 28 |
|  | ERD2FCG220 ⚠ | 🄵 1/4W, 22Ω, Fuse Type | 22 |
|  | ERD2FCG101 ⚠ | 🄵 1/4W, 100Ω, Fuse Type | 8 |
|  | ERD25FVJ4R7 ⚠ | Ⓕ 1/4W, 4.7Ω | 3 |
|  | ERD25FVJ470 ⚠ | Ⓕ 1/4W, 47Ω | 3 |
|  | ERD25FVJ680 ⚠ | Ⓕ 1/4W, 68Ω | 1 |
|  | ERD50FJ221 ⚠ | Ⓕ 1/2W, 220Ω | 2 |
|  | ERG1ANJ101 ⚠ | Ⓕ 1W, 100Ω | 2 |
|  | ERG1ANJP121S ⚠ | Ⓕ 1W, 120Ω | 1 |
|  | ERG1ANJ151 ⚠ | Ⓕ 1W, 150Ω | 2 |
|  | ERQ3CKR33 ⚠ | 🄵 3W, 0.33Ω, Fuse Type | 1 |

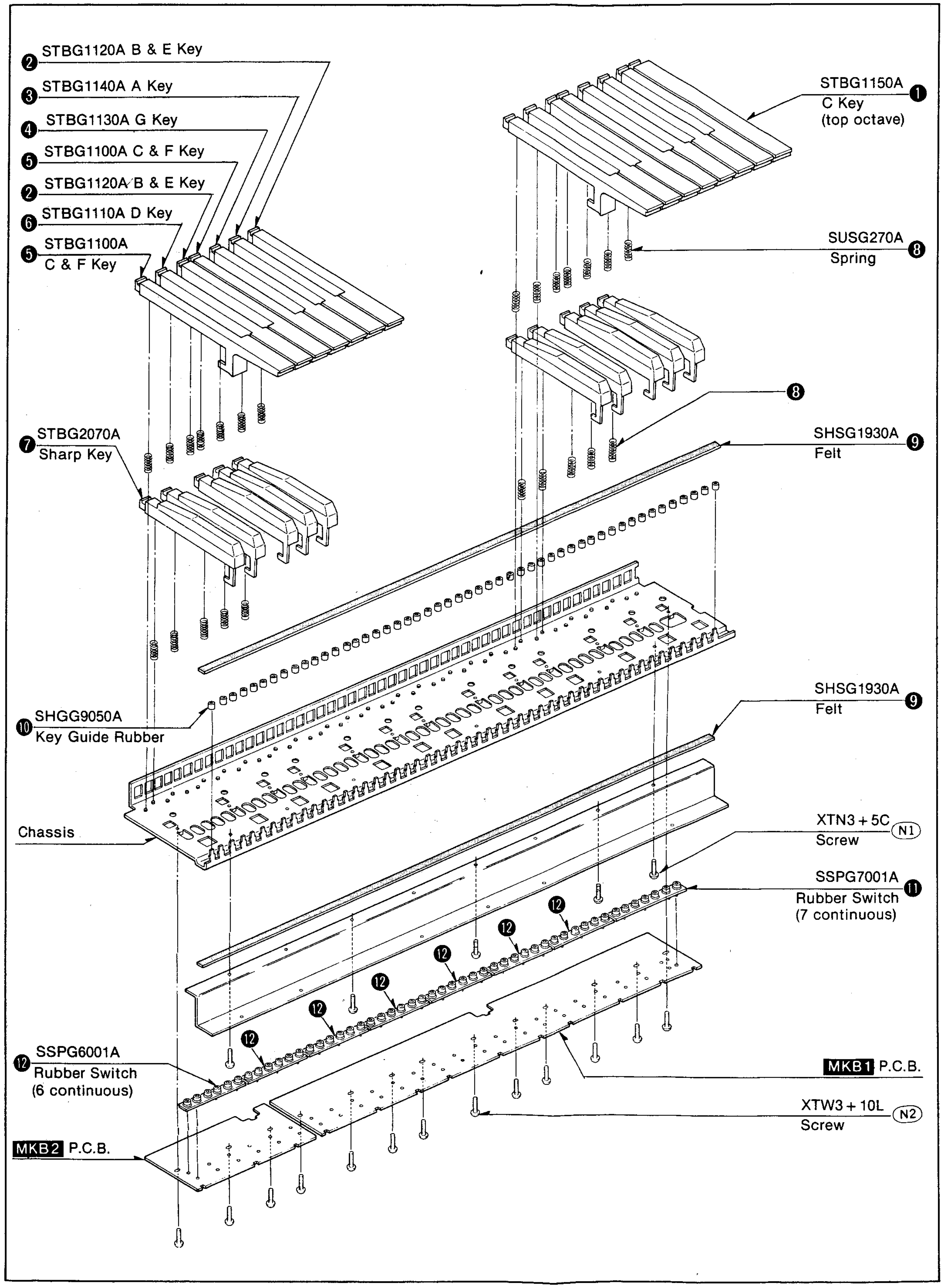
## CAPACITORS

|  | Part No. | Description | Per/ Set |
|---|---|---|---|
|  | ECEA0JU330 | 6.3V, 33µF | 3 |
|  | ECEA0JU470 | 6.3V, 47µF | 2 |
|  | ECEA0JU101 | 6.3V, 100µF | 2 |
|  | ECEA0JU221 | 6.3V, 220µF | 5 |
|  | ECEA0JU331 | 6.3V, 330µF | 2 |
|  | ECEA1CU100 | 16V, 10µF | 8 |
|  | ECEA1CU470 | 16V, 47µF | 25 |
|  | ECEA1CU101 | 16V, 100µF | 20 |
|  | ECEA1CU221 | 16V, 220µF | 3 |
|  | ECEA1CU331 | 16V, 330µF | 10 |
|  | ECEA1EU4R7 | 25V, 4.7µF | 3 |
|  | ECEA1EU100 | 25V, 10µF | 3 |
|  | ECEA1EU330 | 25V, 33µF | 22 |
|  | ECEA1EU470 | 25V, 47µF | 16 |
|  | ECEA1EU101 | 25V, 100µF | 4 |
|  | ECEA1EU222 | 25V, 2200µF | 2 |
|  | ECEA1VU100 | 35V, 10µF | 3 |
|  | ECEA1VU222 | 35V, 2200µF | 2 |
|  | ECEA1HUR47 | 50V, 0.47µF | 5 |
|  | ECEA1HU010 | 50V, 1µF | 33, 35 [XT] |
|  | ECEA1HU2R2 | 50V, 2.2µF | 6 |
|  | ECEA1HU3R3 | 50V, 3.3µF | 1 |
|  | ECEA1HK0R1 | Ⓚ 50V, 0.1µF | 5 |
|  | ECEA1HN010S | Ⓝ 50V, 1µF | 33 |
|  | ECEA50Y1R5 | Ⓨ 50V, 1.5µF | 1 |
|  | ECEA50Y3R3 | Ⓨ 50V, 3.3µF | 1 |
|  | ECEA50Y22 | Ⓨ 50V, 22µF | 1 |
|  | ECEA50ZR1 | Ⓩ 50V, 0.1µF | 7 |
|  | ECEA50ZR15 | Ⓩ 50V, 0.15µF | 3 |
|  | ECEA50ZR22 | Ⓩ 50V, 0.22µF | 3 |
|  | ECEA50ZR68 | Ⓩ 50V, 0.68µF | 4 |
|  | ECEA16M10R | (MS) 16V, 10µF | 8 |
|  | ECEA50M1R | (MS) 50V, 1µF | 5 |
|  | ECEA50M2R2R | (MS) 50V, 2.2µF | 1 |
|  | ECET50R682SW | 50V, 6800µF | 2 |
|  | ECSF1VZ105 | Ⓣ 35V, 1µF | 31 |
|  | ECSF1VZ474 | Ⓣ 35V, 0.47µF | 8 |
|  | ECQM1H102KV | 0.001µF | 56 |
|  | ECQM1H152KV | 0.0015µF | 15 |
|  | ECQM1H222KV | 0.0022µF | 15 |
|  | ECQM1H332KV | 0.0033µF | 16 |
|  | ECQM1H472KV | 0.0047µF | 29 |
|  | ECQM1H682KV | 0.0068µF | 19 |
|  | ECQM1H103KV | 0.01µF | 40 |
|  | ECQM1H153KV | 0.015µF | 9 |
|  | ECQM1H223KV | 0.022µF | 21 |
|  | ECQM1H333KV | 0.033µF | 11 |
|  | ECQM1H473KV | 0.047µF | 23 |
|  | ECQM1H683KV | 0.068µF | 13 |
|  | ECQM1H104KV | 0.1µF | 4 |
|  | ECQV1H102JZ | (TF) 0.001µF | 12 |
|  | ECQV1H152JZ | (TF) 0.0015µF | 8 |
|  | ECQV1H222JZ | (TF) 0.0022µF | 10 |
|  | ECQV1H332JZ | (TF) 0.0033µF | 10 |
|  | ECQV1H472JZ | (TF) 0.0047µF | 14 |
|  | ECQV1H682JZ | (TF) 0.0068µF | 14 |
|  | ECQV1H103JZ | (TF) 0.01µF | 17 |
|  | ECQV1H153JZ | (TF) 0.015µF | 6 |
|  | ECQV1H223JZ | (TF) 0.022µF | 6 |
|  | ECQV1H333JZ | (TF) 0.033µF | 2 |
|  | ECQV1H473JZ | (TF) 0.047µF | 2 |
|  | ECQV1H683JZ | (TF) 0.068µF | 4 |
|  | ECQV1H104JZ | (TF) 0.1µF | 10 |
|  | ECQV1H154JZ | (TF) 0.15µF | 1 |
|  | ECQV1H224JZ | (TF) 0.22µF | 3 |
|  | ECQV1H334JZ | (TF) 0.33µF | 4 |
|  | ECQV1H474JZ | (TF) 0.47µF | 3 |
|  | ECCR1H220J | ○ 22PF | 12 |
|  | ECCR1H330J | ○ 33PF | 20 |
|  | ECCR1H470J | ○ 47PF | 13 |
|  | ECCR1H680J | ○ 68PF | 8 |
|  | ECCR1H101J | ○ 100PF | 51 |
|  | ECCR1H151J | ○ 150PF | 12 |
|  | ECCR1H221J | ○ 220PF | 16 |
|  | ECCR1H331J | ○ 330PF | 30 |
|  | ECCR1H471J | ○ 470PF | 27 |
|  | ECCR1H681J | ○ 680PF | 24 |
|  | ECKR1E473ZV | ○ 0.047µF | 112 |
| ⚠ | ECKCVA1472MF | ○ 4700PF, Line Capacitor | 1 |
| ⚠ | ECQU2A103MF | 0.01µF, 250V, Across-the-Line Capacitor | 1 |
| ⚠ | ECQU1A103MH | 0.01µF, 125V, Across-the-Line Capacitor, [XT] only | 1 |
| ⚠ | ECQE2A104MW | 0.1µF, 250V, Across-the-Line Capacitor, [EZ] only | 1 |
|  | EECW2R3A3R3 | 2.3V, 3.3F, Liquid Electrolyte Double Layer | 3 |

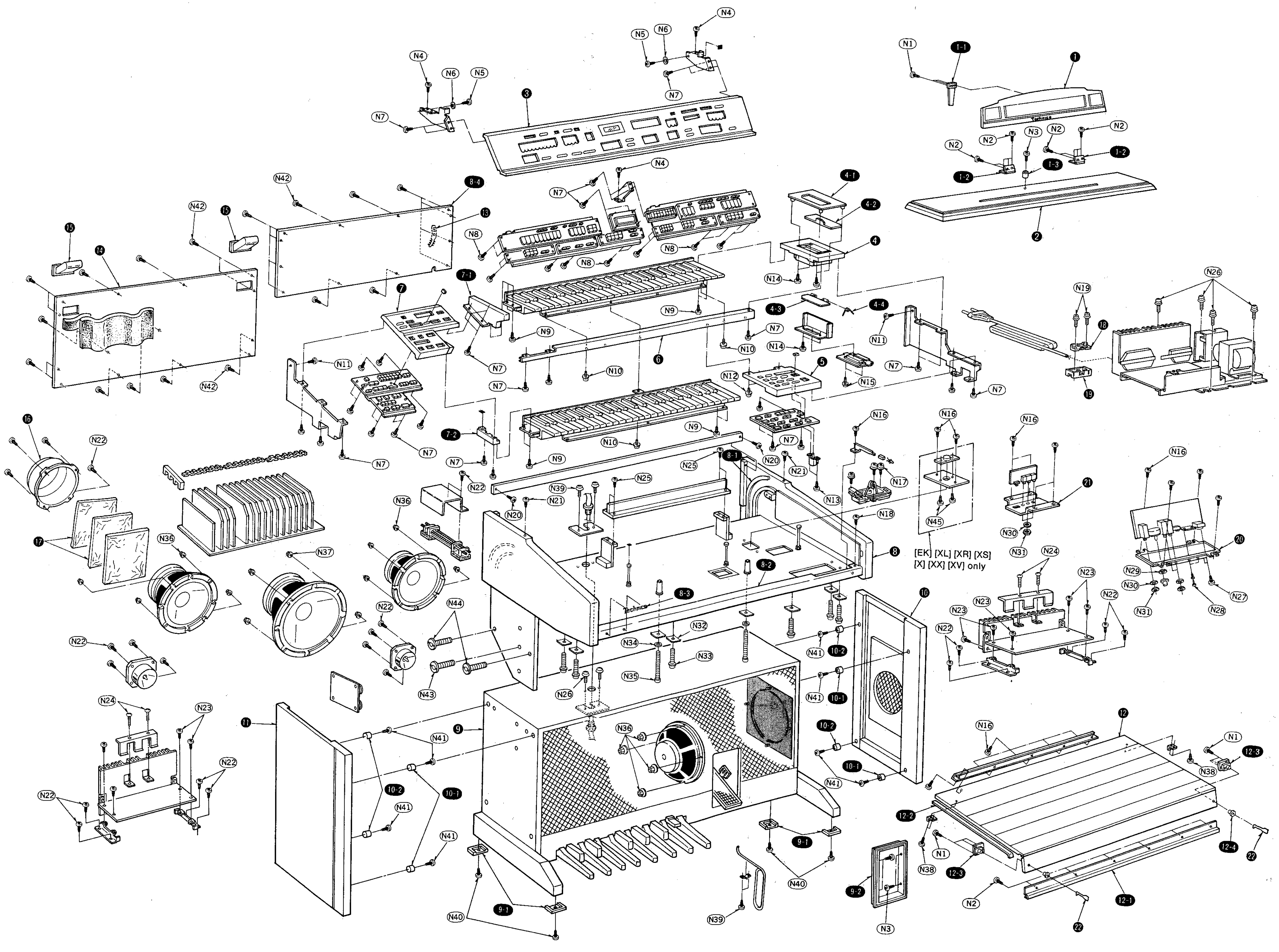
# EXPLODED VIEWS OF PEDAL KEYBOARD


Screw (N1) XTB3 + 6F
Rubber SW. ❶ SHGG50A
Felt (Key Stopper) ❷ SHSG1600B
XNG5BS (N2) Nut
Key Guide ❸ STBG4011A
Felt (Key Guide) ❹ SHSG1460A
Natural Key ❺ STBG1161A
XTB3 + 6B (N3) Screw
Sharp Key ❻ STBG2051A
SUSG180A ❾ Spring
SHGG8130A ❿ Rubber
Full Bass Pedal ❼ STBG2310A
SHRG9240A ⓫ Spacer
Ornament (Full Bass Pedal) ❽ SGXG1390A
SNEG360A (N4) Bolt

# EXPLODED VIEWS OF MANUAL KEYBOARD


❷ STBG1120A B & E Key
❸ STBG1140A A Key
❹ STBG1130A G Key
❺ STBG1100A C & F Key
❷ STBG1120A B & E Key
❻ STBG1110A D Key
❺ STBG1100A C & F Key
STBG1150A ❶ C Key (top octave)
SUSG270A ❽ Spring
❽
❼ STBG2070A Sharp Key
SHSG1930A ❾ Felt
SHSG1930A ❾ Felt
❿ SHGG9050A Key Guide Rubber
Chassis
XTN3 + 5C (N1) Screw
SSPG7001A ⓫ Rubber Switch (7 continuous)
⓬
⓬ SSPG6001A Rubber Switch (6 continuous)
MKB1 P.C.B.
XTW3 + 10L (N2) Screw
MKB2 P.C.B.

# EXPLODED VIEWS OF CABINET



N4
N5
N6
N7
N1
1-1
1
N4
N6
N5
N7
3
N2
N3
N2
N2
N2
1-2
1-3
1-2
N4
N7
4-1
N42
8-4
4-2
N42
15
13
15
14
N8
N8
N8
2
4
N14
7-1
7
N26
N9
N9
4-3
4-4
N7
N19
N11
N11
N10
N14
N7
18
6
N10
N12
5
N15
N7
N7
N7
N42
N7
19
16
N16
N16
N16
N22
7-2
N9
N7
N10
N20
N21
N17
N16
N7
N9
N25
8-1
N22
21
N39
N21
N13
N20
N36
N18
N45
N30
N31
17
N36
N37
8
20
N24
N29
N23
8-2
[EK] [XL] [XR] [XS] [X] [XX] [XV] only
N30
N22
N27
N31
N28
10
8-3
Technics
N22
N44
N23
N23
N32
N22
N34
N41
10-2
N33
N35
N26
N43
N41
10-1
N24
N23
11
9
N36
N41
12
N16
N1
12-3
10-2
N38
N22
10-1
N41
10-1
10-2
N41
12-2
N41
9-1
N1
N38
12-3
12-4
22
N40
N40
N39
9-2
N2
N3
12-1
22
9-1
N40

# REPLACEMANT PARTS LIST......Mechanism

**Notes:**

1. For part No. with area mark, check the area when placing an order.
2. ○ mark are new parts

## ■ MECHANICAL PARTS

| | Ref. No. | Part No. | Description | Per/ Set |
|---|---|---|---|---|
| | | | **CABINET PARTS** | |
| ○ | 1 | SKGG2D71A | Music Rack Assembly | 1 |
| | 1-1 | SBLG7 | Stay | 1 |
| | 1-2 | SBHG5003 | Hinge | 2 |
| | 1-3 | SHGG9040A | Catch Rubber | 1 |
| ○ | 2 | SKPG631A | Top Cover | 1 |
| | 3 | SGWG1420A | Upper Control Panel | 1 |
| | 4 | SYWG5111A | Upper Right End Cover Panel | 1 |
| | 4-1 | SKEG1090A | Receptacle<br>Receptacle for Memory Pack | 1 |
| | 4-2 | SKEG1100A | Slide Cover | 1 |
| | 4-3 | SKEG1111A | Dust Cover | 1 |
| | 4-4 | SUSG300A | Spring | 1 |
| | 5 | SGWG3150C | Lower Right End Cover Panel | 1 |
| | 6 | SGXG1360BS | Ornament Panel for Lower Keyboard | 1 |
| | 7 | SYWG8060A | Left End Cover Panel | 1 |
| | 7-1 | SGEG180A | Ornament | 1 |
| | 7-2 | SGEG160A | Ornament | 1 |
| ○ | 8 | SKMG1100A | Cabinet, Upper Unit | 1 |
| ○ | 8 EZ | SMKG1101A | Cabinet, Upper Unit, [EZ] only | 1 |
| ○ | 8-1 | SKEG7401A | Sliding Cover Guide | 2 |
| | 8-2 | SGXG1310A | Front Panel | 1 |
| | 8-3 | SGBS21 | Technics Badge | 1 |
| ○ | 8-4 | SKZG7470A | Rear Board, Upper | 1 |
| ○ | 9 | SKMG1110A | Cabinet, Lower Unit | 1 |
| | 9-1 | SHRG2080A | Foot | 4 |
| | 9-2 | SGXG1100A | Expression Ornament | 1 |
| ○ | 10 | SKZGB980A | Side Panel (Right) | 1 |
| | 10-1 | SHGG9040B | Catch Rubber (Black) | 2 |
| | 10-2 | SHGG9040A | Catch Rubber (Brown) | 2 |
| ○ | 11 | SKZGB970A | Side Panel (Left) | 1 |
| ○ | 12 | SKZG8260A | Sliding Cover Assembly | 1 |
| ○ | 12-1 | SGXG416A | Ornament | 1 |
| | 12-2 | SHSG2000A | Felt | 2 |
| | 12-3 | SBEG30A | Lock | 2 |
| | 12-4 | SBEG40A | Staple | 2 |
| | 13 | SHRG1030A | Cord Band | 1 |
| ○ | 14 | SYUG1090A | Rear Board, Lower | 1 |
| | 15 | SKHG50A | Handle | 2 |
| | 16 | SHRG8130A | Speaker Cover | 1 |
| | 17 | SHSG9140A | Sound Absorbing Material | 3 |
| | 18 | SHRG1120A | AC Cord Clamper | 1 |
| | 19 | SHRG1110A | AC Cord Clamper | 1 |
| | 20 | SMKG1581A | Jack Panel | 1 |
| | 21 | SMKG1950A | Jack Panel | 1 |
| | | | **BENCH** | |
| | | SZ-CM24A | | 1 |
| | | | **ACCESSORIES** | |
| | 22 | SBEG60A | Key | 1 |
| | | SBEG20A | Hexagonal Rod Wrench | 1 |

| Ref. No. | Part No. | Description | Per/ Set |
|---|---|---|---|
| | | **SCREWS and WASHERS** | |
| N1 | XTB3+10A | Screw | |
| N2 | XTS3+10AFVC | Screw | |
| N3 | XTB3+14AFVC | Screw | |
| N4 | XTT4+12AFR | Screw | |
| N5 | XTB35+14A | Screw | |
| N6 | XWG3X13 | Washer | |
| N7 | XTB4+12A | Screw | |
| N8 | XTB3+12A | Screw | |
| N9 | XTT4+14AFVC | Screw | |
| N10 | XYN5+C10S | Screw, with Spring Washer | |
| N11 | XTB35+20AFZ | Screw | |
| N12 | XYN4+F10S | Screw, with Washers | |
| N13 | SNEG740A | Screw | |
| N14 | XTV3+10G | Screw | |
| N15 | XYN3+F14S | Screw, with Washer | |
| N16 | XTB35+12A | Screw | |
| N17 | XYN3+C12S | Screw, with Washer | |
| N18 | XTB3+8BFVC | Screw | |
| N19 | XYN3+F20S | Screw, with Washer | |
| N20 | XTB35+30A | Screw | |
| N21 | XTT4+30A | Screw | |
| N22 | XTT4+14A | Screw | |
| N23 | XTB3+6F | Screw | |
| N24 | XTV3+6C | Screw | |
| N25 | XTB35+25A | Screw | |
| N26 | XYN4+F20FZS | Screw, with Washer | |
| N27 | XYNSG3S | Screw, with Washer | |
| N28 | SHR401-1 | Nylon Latch | |
| N29 | SNE4021-1 | Nut | |
| N30 | SNEG770A | Washer | |
| N31 | XNS12FZ | Nut | |
| N32 | SNEG150A | Washer | |
| N33 | XYN5+C30S | Screw, with Washer | |
| N34 | XWA5B | Spring Washer | |
| N35 | SNEG960A | Screw | |
| N36 | SNE491 | Nut | |
| N37 | SNE499-1 | Nut | |
| N38 | XTS4+12A | Screw | |
| N39 | XYN3+F16S | Screw, with Washers | |
| N40 | XTB35+35A | Screw | |
| N41 | XTB3+14A | Screw | |
| N42 | XTT4+30AFVC | Screw | |
| N43 | SNEG750A | (Black) | |
| N44 | SNEG750B | (Red) | |
| N45 | XYN3+C8FZS | Screw, [EK], [XS], [XL], [XR], [X], [XX], [XV] only | |

| Ref. No. | Part No. | Description | Per/ Set |
|---|---|---|---|
| | | **MANUAL KEYBOARD** | |
| 1 | STBG1150A | Natural Key (top Octave C Key) | 1 |
| 2 | STBG1120A | Natural Key (B and E Key) | 8 |
| 3 | STBG1140A | Natural Key (A Key) | 4 |
| 4 | STBG1130A | Natural Key (G Key) | 4 |
| 5 | STBG1100A | Natural Key (C and F Key) | 8 |
| 6 | STBG1110A | Natural Key (D Key) | 4 |
| 7 | STBG2070A | Sharp Key | 20 |
| 8 | SUSG270A | Spring | 49 |
| 9 | SHSG1930A | Felt | 2 |
| 10 | SHGG9050A | Key Guide Rubber | 49 |
| 11 | SSPG7001A | Rubber Switch (7 continuous) | 1 |
| 12 | SSPG6001A | Rubber Switch (6 continuous) | 7 |
| N1 | XTN3+5C | Screw | 5 |
| N2 | XTW3+10L | Screw | 13 |
| | | **PEDAL KEYBOARD** | |
| 1 | SHGG50A | Rubber Switch (5 continuous) | 3 |
| 2 | SHSG1600B | Felt (Key Stopper) | 1 |
| 3 | STBG4011A | Key Guide | 1 |
| 4 | SHSG1460A | Felt (Key Guide) | 14 |
| 5 | STBG1161A | Natural Key | 8 |
| 6 | STBG2051A | Sharp Key | 5 |
| 7 | STBG2310A | Full Bass Padal | 1 |
| 8 | SGXG1390A | Ornament (Full Bass Pedal) | 1 |
| 9 | SUSG180A | Spring | 14 |
| 10 | SHGG8130A | Rubber | 14 |
| 11 | SHRG9240A | Spacer | 14 |
| N1 | XTB3+6F | Screw | 6 |
| N2 | XNG5BS | Nut | 14 |
| N3 | XTB3+6B | Screw | 5 |
| N4 | SNEG360A | Bolt | 14 |

| | Part No. | Description | Per/ Set |
|---|---|---|---|
| | | **SWITCH MOLD ASSEMBLY** | |
| ○ | SSHG9057AA | upper tab voices, harmonic coupler, percussive tone, upper organ presets and others | 1 |
| ○ | SSHG8016AA | bass, volume | 1 |
| ○ | SSHG6016AA | U & L vocal ensemble, string ensemble | 1 |
| ○ | SSHG9058AA | U & L percussive presets | 1 |
| ○ | SSHG9059BA | multi-tremolo/vibrato, celeste, lower tab voices, volume, harmonic coupler | 1 |
| ○ | SSHG9060AA | Voice Setting Computer, U & L orchestral presets | 1 |
| ○ | SSHG9061AA | U & L solo synthesizer presets | 1 |
| ○ | SSHG9022AA | orchestral conductor | 1 |
| | SSHG9042AA | Program Rhythm Computer | 1 |
| | SSHG9043AA | bass solo, transpose, techni-chord, Program Chord Computer and others | 1 |
| | SSHG9044AA | tuning, sustain control, Fullband Setting Computer and others | 1 |

| Part No. | Description | | Per/ Set |
|---|---|---|---|
| | **KNOBS** | | |
| SBNG6010G | Slide Volume Knob, tempo control | | 1 |
| SBNG4010A | Mic Volume Knob | | 1 |
| | **BUTTONS** | | |
| SBCG20I47 | power switch | | 1 |
| SBCG150G01 | upper tab voices | upper orchestral conductor | 1 |
| SBCG140G01 | percussive presets | | 1 |
| SBCG140G02 | organ presets | | 1 |
| SBCG140G03 | orchestral presets | | 1 |
| SBCG140G04 | solo synthe presets | | 1 |
| SBCG140G06 | string ensemble | | 1 |
| SBCG140G07 | vocal ensemble | | 1 |
| SBCG150H01 | lower tab voices | lower orchestral conductor | 1 |
| SBCG140H01 | percussive presets | | 1 |
| SBCG140H02 | organ presets | | 1 |
| SBCG140H03 | orchestral presets | | 1 |
| SBCG140H04 | solo synthe presets | | 1 |
| SBCG140H06 | string ensemble | | 1 |
| SBCG140H07 | vocal ensemble | | 1 |
| SBCG140L01 | I | voice setting computer | 1 |
| SBCG140L02 | II | | 1 |
| SBCG140L03 | III | | 1 |
| SBCG140L04 | IV | | 1 |
| SBCG140L05 | V | | 1 |
| SBCG140L06 | VI | | 1 |
| SBCG140L07 | VII | | 1 |
| SBCG141D01 | cancel | | 1 |
| SBCG140B01 | acoustic piano | U & L percussive presets | 1 |
| SBCG140B02 | electric piano | | 1 |
| SBCG140B04 | harpsichord | | 1 |
| SBCG140B05 | vibraphone | | 1 |
| SBCG140B06 | acoustic guitar | | 1 |
| SBCG140B07 | jazz guitar | | 1 |
| SBCG140B09 | banjo | | 1 |
| SBCG140B21 | clavi | | 1 |
| SBCG170C00 | harmonic control | | 2 |
| SBCG170G00 | volume | | 2 |
| SBCG140E01 | trombone | U & L orchestral presets | 1 |
| SBCG140E02 | saxophone | | 1 |
| SBCG140E03 | accordion | | 1 |
| SBCG140E04 | clarinet | | 1 |
| SBCG140E05 | wah brass | | 1 |
| SBCG140E06 | synthe brass | | 1 |
| SBCG170C00 | harmonic control | | 2 |
| SBCG170G00 | volume | | 2 |
| SBCG140F01 | trombone | U & L solo synthesizer presets | 1 |
| SBCG140F02 | saxophone | | 1 |
| SBCG140F03 | trumpet | | 1 |
| SBCG140F04 | clarinet | | 1 |
| SBCG140F05 | flute | | 1 |
| SBCG140F06 | panflute | | 1 |
| SBCG140F07 | synthe chopper | | 1 |
| SBCG140F18 | cosmic | | 1 |
| SBCG170G00 | volume | | 2 |

| Part No. | Description | | Per/ Set |
|---|---|---|---|
| SBCG140A01 | I | upper organ presets | 1 |
| SBCG140A02 | II | | 1 |
| SBCG140A17 | III | | 1 |
| SBCG140A18 | IV | | 1 |
| SBCG130A01 | flute 16′ | upper tab voices | 1 |
| SBCG130A02 | flute 8′ | | 1 |
| SBCG130A03 | flute $5^{1}/_{3}$′ | | 1 |
| SBCG130A04 | flute 4′ | | 1 |
| SBCG130A05 | flute $2^{2}/_{3}$′ | | 1 |
| SBCG130A06 | flute 2′ | | 1 |
| SBCG130A07 | flute $1^{1}/_{3}$′ | | 1 |
| SBCG130A08 | flute 1′ | | 1 |
| SBCG130B01 | string 8′ | | 1 |
| SBCG130B02 | string 4′ | | 1 |
| SBCG170G00 | volume | | 2 |
| SBCG160C00 | slow attack | | 1 |
| SBCG160K00 | $2^{2}/_{3}$′, program | upper harmonic coupler | 2 |
| SBCG161J00 | cancel | | 1 |
| SBCG130A09 | 4′ | percussive tone | 1 |
| SBCG130A10 | $2^{2}/_{3}$′ | | 1 |
| SBCG130A11 | 2′ | | 1 |
| SBCG130C01 | click | | 1 |
| SBCG170G00 | volume | | 2 |
| SBCG160C00 | long | | 1 |
| SBCG140A03 | bass 16′ | bass | 1 |
| SBCG140A04 | bass 8′ | | 1 |
| SBCG140B10 | electric bass | | 1 |
| SBCG140B11 | acoustic bass | | 1 |
| SBCG140F08 | synthe bass | | 1 |
| SBCG140F09 | tuba | | 1 |
| SBCG170G00 | volume | | 2 |
| SBCG170G00 | U & L vocal ensemble volume | | 2 |
| SBCG170G00 | U & L string ensemble volume | | 4 |
| SBCG160E00 | vibrato | multi-tremolo/vibrato | 1 |
| SBCG130A12 | U tab voices | | 1 |
| SBCG130A13 | L tab voices | | 1 |
| SBCG130D02 | slow/fast | | 1 |
| SBCG161A01 | cancel | celeste | 2 |
| SBCG140A16 | tab voices | | 2 |
| SBCG161E01 | cancel | | 1 |
| SBCG140E20 | orchestral presets | | 1 |
| SBCG161F01 | cancel | | 1 |
| SBCG140F23 | solo synthe presets | | 1 |
| SBCG130A02 | flute 8′ | lower tab voices | 1 |
| SBCG130A04 | flute 4′ | | 1 |
| SBCG130A06 | flute 2′ | | 1 |
| SBCG130B01 | string 8′ | | 1 |
| SBCG130B02 | string 4′ | | 1 |
| SBCG170G00 | volume | | 2 |

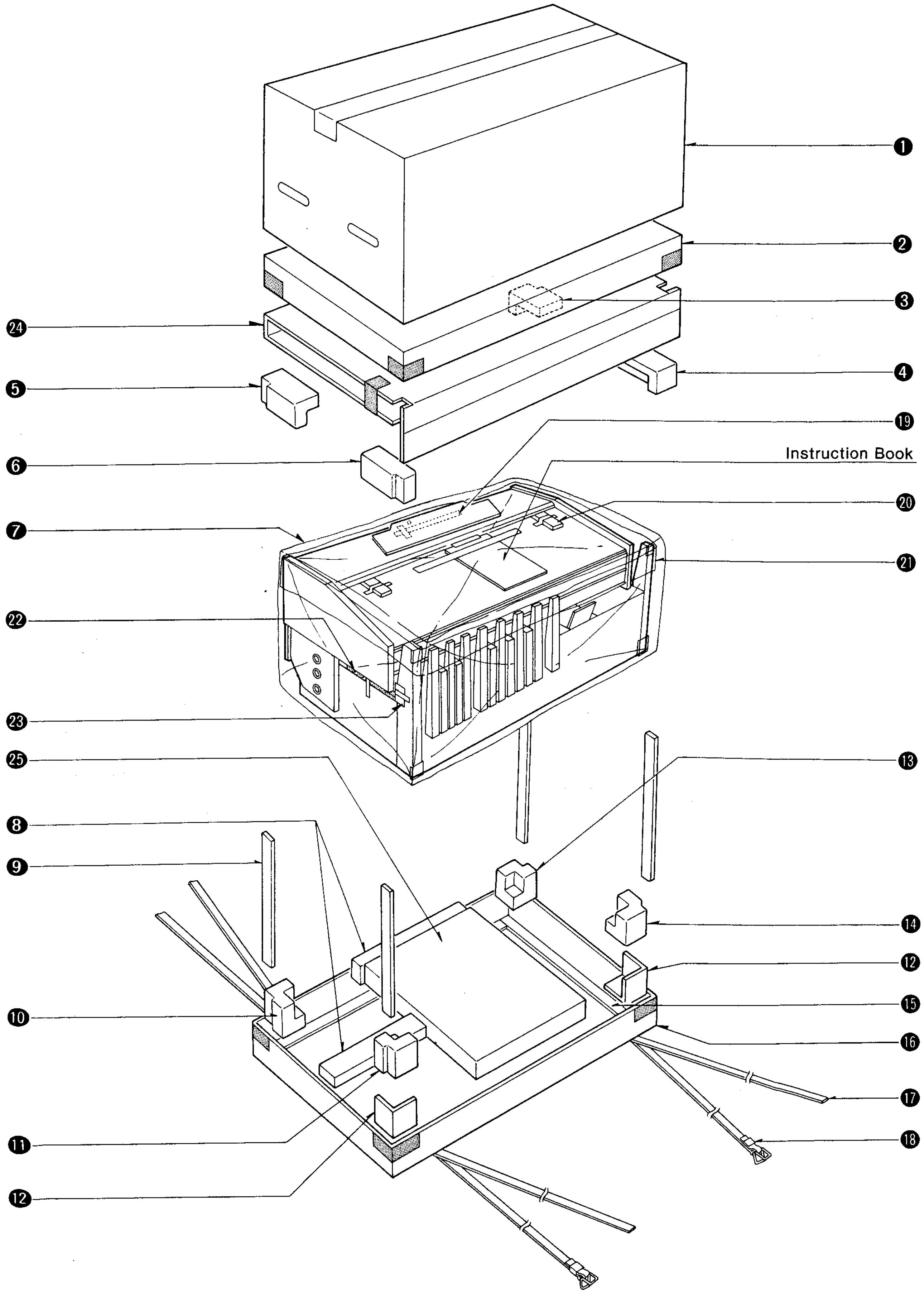
| Part No. | Description | | Per/ Set |
|---|---|---|---|
| SBCG160K00 | 2′, program | lower harmonic coupler | 2 |
| SBCG161J00 | cancel | | 1 |
| SBCG140E00 | rhythm sequencer | | 1 |
| SBCG140E16 | I | composer | 1 |
| SBCG140E17 | II | | 1 |
| SBCG140A23 | march | drum percussion selector | 1 |
| SBCG140C11 | 8 beat | | 1 |
| SBCG140A25 | ballad | | 1 |
| SBCG140C13 | rumba | | 1 |
| SBCG140A27 | mambo | | 1 |
| SBCG140C15 | waltz | | 1 |
| SBCG140A28 | tango | | 1 |
| SBCG140C14 | samba | | 1 |
| SBCG140A26 | bossanova I | | 1 |
| SBCG140C12 | disco I | | 1 |
| SBCG140A24 | 16 beat | | 1 |
| SBCG140C10 | swing I | | 1 |
| SBCG140B13 | I | arrange percussion | 1 |
| SBCG140B14 | II | | 1 |
| SBCG140K01 | on | drum percussion | 1 |
| SBCG140J01 | mellow | | 1 |
| SBCG170G00 | volume | | 2 |
| SBCG140B15 | I/II | rhythmic orchestra | 1 |
| SBCG140E18 | rhythmic | | 1 |
| SBCG140E19 | melodic | | 1 |
| SBCG170G00 | volume | | 2 |
| SBCG140A29 | fine | tempo set | 1 |
| SBCG140L01 | I | | 1 |
| SBCG140L02 | II | | 1 |
| SBCG140K02 | I | fill in & intro | 1 |
| SBCG140K03 | II | | 1 |
| SBCG140C00 | bass solo | | 1 |
| SBCG140E10 | transpose | | 1 |
| SBCG140L08 | close/open | techni-chord | 1 |
| SBCG140D02 | on | | 1 |
| SBCG141K01 | cancel | Program Chord Computer | 1 |
| SBCG140J02 | PCC | | 1 |
| SBCG140J03 | fingered | | 1 |
| SBCG140A13 | memory | | 1 |
| SBCG140F10 | record | | 1 |
| SBCG140A30 | glide/rhythm | drum percussion control | 1 |
| SBCG140A15 | synchro | | 1 |
| SBCG150G00 | start/stop | | 1 |
| SBCG160C00 | free set | tuning | 1 |
| SBCG170G00 | control volume | | 2 |

|  | Part No. | Description | Per/ Set |
|---|---|---|---|
|  | SBCG160C00 | on } sustain control | 3 |
|  | SBCG170G00 | control volume | 8 |
|  | SBCG160B00 | bass, lower } Play Sequencer | 2 |
|  | SBCG160E00 | upper, solo | 2 |
|  | SBCG170G00 | main volume, reverb | 4 |
|  | SBCG140L00 | Fullband Setting Computer | 1 |
|  | SHRG9390A | lever } tang switch button | 22 |
|  | SHRG9400A | case | 22 |
|  | SHRG9410A | lever | 158 |
|  | SHRG9430A | lever (2 continuous) } push switch button | 3 |
|  | SHRG9420A | case | 164 |
|  |  | **INSTRUCTION BOOK** |  |
| ○ | SQFG1770 | Instruction Book<br>(NORSK, SVENSKA, DANSK, SUOMI) |  |
| ○ | SQFG1780 | Instruction Book<br>(DEUTSCH, FRANÇAIS, ESPAÑOL NEDERLANDS) |  |
| ○ | SQFG1790 | Instruction Book<br>(ENGLISH, ESPAÑOL) |  |

## ■ PACKING PARTS

|  | Ref. No. | Part No. | Description | Per/ Set |
|---|---|---|---|---|
| ○ |  | SPNGG5E | Packing Parts Assembly | 1 |
| ○ | 1 | SPNG1559A | Carton Box | 1 |
| ○ | 2 | SPNG1560A | Top Case | 1 |
| ○ | 3 | SPNG5480A | Pad, Rear Right Side | 1 |
| ○ | 4 | SPNG5477A | Pad, Front Right Side | 1 |
| ○ | 5 | SPNG5479A | Pad, Rear Left Side | 1 |
| ○ | 6 | SPNG5475A | Pad, Front Left Side | 1 |
| ○ | 7 | SPHG770A | Polyethylene Bag | 1 |
| ○ | 8 | SPNG5483A | Spacer | 2 |
| ○ | 9 | SPNG3064A | Prop | 4 |
| ○ | 10 | SPNG5481A | Pad, Rear Left Side | 1 |
|  | 11 | SPNG5355A | Pad, Front Left Side | 1 |
|  | 12 | SPNG5484A | Corner Support | 2 |
| ○ | 13 | SPNG5482A | Pad, Rear Right Side | 1 |
|  | 14 | SPNG5356A | Pad, Front Right Side | 1 |
| ○ | 15 | SPNG3063A | Frame | 1 |
| ○ | 16 | SPNG1561A | Bottom Case | 1 |
|  | 17 | SZTJBP19HC | Band | 2 |
|  | 18 | SPSG10A | Band, with Ring | 2 |
|  | 19 | SPNG5389A | Spacer | 1 |
|  | 20 | SPNG5161A | Spacer, Top Cover | 2 |
|  | 21 | SPHG25 | Protection Cover | 1 |
|  | 22 | SPNG5474A | Spacer | 2 |
|  | 23 | SPNG1557A | Spacer | 2 |
| ○ | 24 | SPNG1558A | Protection Case, Side Panel | 1 |
|  | 25 | SPEG1087A | Packing Parts Assembly, Bench | 1 |

# PACKING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